TECHNICAL MANUAL

GENERAL VEHICLE

ORGANIZATIONAL MAINTENANCE

DESCRIPTION

USAF/EPAF SERIES

F-16A/B

AIRCRAFT

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Original..................0 .... 15 Sep 04

TOTAL NUMBER OF PAGES IN THIS PUBLICATION IS 526, CONSISTING OF THE FOLLOWING:

Page No.	*Change No.	Page No.	*Change No.	Page No.	*Change No.
Title	0	1-1 - 1-50	0	8-1 - 8-5	0
A	0	2-1 - 2-77	0	8-6 Blank	0
i - ix	0	2-78 Blank	0	9-1 - 9-12	0
x Blank	0	3-1 - 3-7	0	10-1 - 10-35	0
xi	0	3-8	0	10-36 Blank	0
xii Blank	0	6-1 - 6-21	0	11-1 - 11-56	0
xiii - xlix	0	6-22 Blank	0	12-1 - 12-30	0
l Blank	0	7-1 - 7-9	0	13-1	0
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INTRODUCTION

1. PURPOSE OF THE GENERAL VEHICLE MANUAL.

The General Vehicle (GV) Manual is one of a set of organizational maintenance manuals which provide on vehicle organizational maintenance of the F-16 Air Combat Fighter/ Trainer. Purpose of the manual is to provide a general description of the aircraft and installed systems and to provide general maintenance procedures or data applicable to two or more systems but not suitable for job guide format. The manual contains an explanation of the F-16 Technical Order numbering system and the Maintenance Integrated Data Access System (MIDAS).

2. SCOPE OF THE GV MANUAL.

The GV manual provides general information to be used by maintenance personnel to further their understanding of the aircraft and the installed systems. The manual provides organizational maintenance information that is not adaptable to job guide format.

3. ARRANGEMENT OF THE GV MANUAL.

The GV manual is arranged by sections and subject matter as follows:

TO 1F-16( )-2-00GV-00-1

Chapter 00	General Vehicle Description
Chapter 1	Locally Manufactured Support Equipment
Chapter 2	General Maintenance Procedures
Chapter 3	Aircraft Safety
Chapter 4	(Reserved)
Chapter 5	(Reserved)
Chapter 6	Dimensions and Areas
Chapter 7	Lifting, Shoring, Recovering, and Transporting
Chapter 8	Leveling and Weighing
Chapter 9	Towing and Taxiing
Chapter 10	Parking and Mooring
Chapter 11	Placards and Markings
Chapter 12	Servicing
Chapter 13	(Reserved)

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Chapter 14	Wiring Repair and Electrical Maintenance Procedures
Chapter 15	Circuit Breaker Panels, Overcurrent Protection Panels, and Relay Matrices
Chapter 16	(Reserved)

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Chapter 17	Nose Radome, Forward Equipment Bay, and Lower Equipment Bay (FS -27.2 to FS 110.5)
Chapter 18	Aft Equipment Bay, F1 Fuel Tank, and Engine Air Inlet (FS 110.5 to FS 243.0)
Chapter 19	F2 Fuel Tank, Reservoir Tanks, Air-Conditioning Equipment Bay, Right Aft Avionics Bay, Engine Pressure Face, and Leading Edge Flap Drive Unit (FS 243.0 to FS 373.8)
Chapter 20	Engine Cavity, Aft Fuel Tank, Speedbrakes, Ventral Fins, Vertical Stabilizer, Rudder, and Left and Right Horizontal Stabilizers (FS 373.8 to Aft End of Aircraft)
Chapter 21	Left Wing, Leading Edge Flap, and Flaperon
Chapter 22	Right Wing, Leading Edge Flap, and Flaperon
Chapter 23	Nose Landing Gear, Door and Wheel Well
Chapter 24	Main Landing Gear, Doors and Wheel Wells
Chapter 25	Canopy, Cockpit, and Seat

4. USE OF THE GV MANUAL.

The GV manual is used to familiarize the reader with the F-16 aircraft, its configuration, and size as well as providing a short general description of each system or subsystem installed in the aircraft. A table of contents listing each section title and major subject heading, a list of illustrations containing title and figure number of each illustration, and a list of tables are located in front of the manual.

5. USE OF SHALL, WILL, SHOULD, AND MAY.

The words shall, will, should, and may have the following meanings in this manual:

Shall	Provision that is mandatory
Should and May	Provision that is non-mandatory
Will	Declaration of purpose

6. MAINTENANCE MANUAL SET ARRANGEMENT.

The maintenance manual set is divided into general and specific coverage of the aircraft and systems to provide usable and complete on vehicle maintenance at the organizational (flight line) level. The General Vehicle Manual will serve to indoctrinate and familiarize maintenance personnel with the

aircraft and aircraft systems. System maintenance personnel may improve their knowledge of the systems by using the General System (GS) Manuals, one for each system, and by using the step-by-step procedural instructions found in the Job Guide (JG) Manuals. The manual set is divided as set forth in the following paragraphs.

6.1 General Vehicle Manual. The GV Manual provides an overview of the organizational maintenance manual set, explains the interrelation of the technical order/numbering system between manuals, provides an overall vehicle description with a summary of all systems and subsystems, and presents general information for ground handling and servicing the vehicle. The manual is arranged in sections, each of which addresses one or more of the above subjects. The manual also contains maintenance instructions that are general in nature (applicable to more than one system) and not suitable for job guide format. The manual is used by maintenance personnel to gain a general knowledge and understanding of the overall vehicle and systems.

6.2 General System Manuals. The General System Manuals, one for each major system, provide detailed system, subsystem, and sub-subsystem description, theory of operation, and maintenance support information not suitable for job guide format. Each manual is arranged in sections with system/subsystem coverage aligned to agree with Job Guide Manual coverage. The manual presents the purpose, type, main features, and supporting data for the system being covered. Additionally, each manual contains a listing of special tools and test equipment and a listing of consumables applicable to the system covered.

6.3 Job Guide Index Manual. The Job Guide Index Manual provides a list of the Job Guide functions and general maintenance functions performed at organizational level for the F-16 aircraft. Also, functions which lose their identity as a result of being combined into another function will be listed. The Job Guide Index TO 1F-16( )-2-00JG-00-1 is made up of four sections.

6.3.1 Section 1 of the manual provides a master listing of job guides for each aircraft system and subsystem on-vehicle maintenance procedure. The data is presented in job guide TO number order and grouped according to aircraft system and subsystems.

6.3.2 Section 2 of the manual provides an alphanumerical list of procedures for operational checkouts, on-vehicle tests, calibration procedures, adjustment and repair procedures, and removal and installation procedures. The data includes the various functions contained in the JG manuals.

6.3.3 Section 3 of the manual provides a numerical listing of job guide procedures for operational checkouts, on-vehicle tests, calibration procedures, adjustment and repair procedures, and removal and installation procedures. The data provides an expedient cross-reference between the various functions, tasks, and components to the applicable JG manual.

6.3.4 Section 4 of the manual provides an alphanumerical listing of all the pertinent general maintenance procedures contained in the F-16 General Vehicle and General System Manuals. The data includes the various maintenance procedures not provided in the JG manual set but must be completed to satisfy the requirements of a given function.

6.4 Job Guide Manuals. The Job Guide Manuals provide complete start-to-finish maintenance instructions for technicians performing on vehicle maintenance functions on specific systems. The instructions include removal and installation, operational checkout, alignment, adjustment, and calibration procedures. For large or complex systems, an overall system Job Guide Manual and separate subsystem Job Guide Manuals are provided. Where no overall system Job Guide Manual is provided, separate subsystem Job Guide Manual(s) will contain all of the maintenance instructions applicable to that system and its subsystems. Where an overall system Job Guide Manual and separate subsystem Job Guide Manuals are provided for a system, the operational checkouts and system level adjustment, alignment, and calibration procedures are located at the most usable location within the job guides. The subsystem Job Guide Manuals contain removal and installation procedures and other subsystem/sub-subsystem level operational check-out, adjustment, and alignment procedures. Input condition and follow-on maintenance entries for multitask functions are coded in parentheses to indicate the last digit(s) of the paragraph number(s) affected. This code appears at the beginning of the entry. When necessary due to multitask functions, the Support Equipment and Supplies (Consumables) under Input Conditions are coded 1, 2, 3, etc. The codes are used to stipulate equipment and supply usage. Code (1) indicates usage when performing the first task and code (1, 3) indicates usage when performing the first and third tasks. Uncoded items are used in all tasks. Fault Isolation Manual codes are shown in parentheses following the appropriate procedural step RESULT statement.

6.5 Fault Reporting Manual. The Fault Reporting Manual (FRM) is a debriefing aid which provides the flight crew and ground personnel with the detailed technical data needed to expedite the identification, analysis, and reporting of fault reportable aircraft system malfunctions to maintenance. The FRM contains failure information on aircraft system faults. Fault reportable aircraft system malfunctions are those that conform to the following considerations:

a. Faults which are detectable after the arrival of the flightcrew through their departure shall be covered.

b. Faults which are observed while the aircraft is in flight shall be covered.

c. Faults shall not be covered if they require the use of support equipment. (Launch equipment shall not be considered as support equipment.)

d. In determining what faults are observable, it shall be assumed that the vehicle is in a normal operational condition and that all preflight or prelaunch conditions have been met.

6.5.1 Initial failure information is based upon malfunction analysis of equipment by engineering studies. Subsequent failure information is based upon operator feedback.

NOTE

The effectiveness of the FRM after initial distribution to the user, to a large extent, is dependent upon operations and maintenance personnel who are active participants in the program and who are actively using the FRM.

6.5.2 The FRM table of contents lists the sections of the manual by system title and page number. Section pictorial/ alphabetical tables of content further subdivide the system into applicable subsystems and their location page numbers.

6.5.3 Each pictorial will be illustrated with the page number of its first appearance in the fault identification and description. If a subsystem number applies to more than one item, the pictorial of each item will include its nomenclature as well as the page number.

6.5.4 The system title is located in the lower outside corner block above each page number. Subsystem titles, when required, are located below the system title. Aircraft effectivity is located in the lower center block. Aircraft effectivity notes and other pertinent data pertaining to that page are located in the effectivity block.

6.5.5 Additional configuration information, when needed, is found on Config-1 and Config-2 pages at the end of each section.

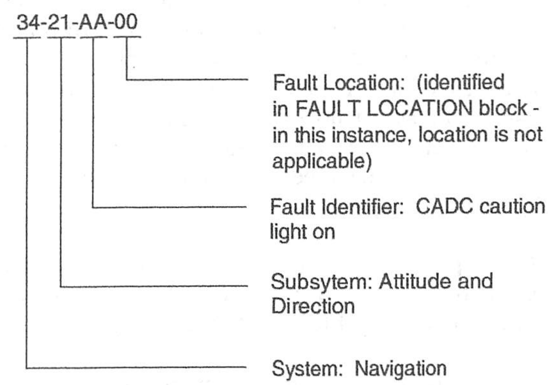
6.5.6 When new configurations are input into the FRM that replace old configurations, the old configuration shall remain in the FRM until advised by the procuring activity to remove same.

6.5.7 The fault identification and description page for each system provides an area in the upper left corner for cockpit panel displays and a fault location code list in the upper right corner. The upper right corner of the first page also contains a circuit breaker list when applicable. The fault diagnostic logic information appears in the body of the page in block flow form. This form identifies the fault as well as relevant conditions leading to numeric-alphanumeric code. These pages provide the conditions existing at the time the fault occurred and/or, when applicable, a cross-reference listing from self-test degree of severity and test number failed to a fault code. User may follow the known conditions flow ending at right side of page to obtain the fault code. The description of the fault code, if desired, may be obtained from the log book report page of the affected system.

6.5.8 The alphanumeric code links the fault in the FRM to the corresponding solution steps used by maintenance in the Fault Isolation Manual (FIM). This continuity is established through the system/sub-system/sub-subsystem fault identifier location code composition. As an example, a complete fault code would appear on a fault identification page as follows:

34-21-AA-00

6.5.9 The fault code elements are broken down as follows:



CO-00GV-00-1-0524X99

6.5.10 The two-letter fault identifiers used to identify faults are assigned so that the first letter identifies the basic fault. The second letter identifies a subfault found within the basic fault. The letters A, B, and C, when used in the second-letter position, are reserved exclusively to designate basic faults (i.e., AA, AB, and AC are basic faults).

6.5.11 The remaining letters of the alphabet, except for I and O, which are not used, are used to designate subfaults within the basic first-letter fault (i.e., AD, AE, AF, etc., are subfaults of the A basic fault). The letters X, Y, and Z, when used in the first-letter position, are reserved for exclusive use as the first entry for a single-entry fault (i.e., XD, XE, etc.). The numerical digits "00" are used in fault identifier for faults not listed. When similar faults appear in several subsystems, cross referencing is used. Cross-referenced fault identifier codes and word description of each system fault code are

found in the associated log book report for each section in the manual.

6.5.12 Each location in the system/subsystem/sub-subsystem is followed by a two-digit number, starting with 01. The numbers are in numerical order through the last location in the system/subsystem/sub-subsystem. If fault isolation procedures are identical (except for connectors, pins, relays, etc.) for similar/identical components, one fault code will be assigned and the fault location code will be left blank. Completion of the location code is the responsibility of the user. The last entry in the fault location block is NOT APPLICABLE 00. The locator codes are used to identify a fault to a specific item or section when the item is used in more than one place, i.e., left and right subassemblies - left main landing gear 01, right main landing gear 02, etc.

6.5.13 A log book report immediately follows the fault identification and description information. Each log book report contains complete word descriptions of all coded faults and is furnished so that no other source of information is required by maintenance personnel to fully identify the malfunction. In the log book report, the fault identifier (fifth and sixth digits of the fault code) is followed by the complete word description as depicted on the fault identification and description page(s) or as set up in a job guide. Any deleted fault codes are added at the end of the log book report to identify those codes which have been deleted due to nonuse or aircraft configuration changes.

6.5.14 FRM subjects may be located by using the alphabetical index in the front matter. A multiple listing cross-reference locates subjects by FRM section and page number.

6.5.15 The FIM used in conjunction with the Fault Reporting Manual provides fault isolation and solution procedures for each aircraft system.

6.6 Fault Isolation Manual. The FIM is one of a set of manuals providing organizational maintenance instructions for the F-16 aircraft. The FIM is used in conjunction with the FRM, Scheduled Inspection and Maintenance Requirements Manual, Corrosion Control Manual, Nondestructive Inspection Manual, and associated Job Guide Manuals as applicable. The FIM provides fault identification, description, and isolation procedures for the applicable system.

6.6.1 The manual provides technical information required to fault isolate a detected fault within the applicable system. Each fault isolation procedure terminates with fault correction or reference to a schematic diagram or another system FIM for further fault analysis. The system failure information contained in the manual is based upon malfunction analysis of equipment prior to aircraft delivery. Failure information gained from experience will be added to this manual as the information becomes available.

NOTE

The effectiveness of the FIM after initial distribution to the user, to a large extent, is dependent upon operations and maintenance personnel who are active participants in the program and who are actually using the manual.

6.6.2 The pictorial/alphabetical table of contents identifies the system, subsystem, and/or sub-subsystem number covering the identified fault. The multi-listing alphabetical index will provide the same information when the nomenclature is provided. The system and/or subsystem number is used to locate the fault identification and description page.

6.6.3 Aircraft effectivity symbols, when applicable to the entire page, are located in the lower center block. Aircraft effectivity notes or other pertinent data pertaining to that page may also be located in the effectivity block. Aircraft effectivity symbols appearing on a page other than in the effectivity block pertain only to that item or information designated.

6.6.4 Aircraft effectivity for schematic diagrams, located in the rear of each applicable fault isolation manual, is located at the end of each figure title when applicable.

6.6.5 Each fault identification and description page for each system shows a panel display in the upper left corner. The upper right corner of the first page contains both a circuit breaker list and a fault location code list. The fault diagnostic logic information appears in the body of the page in block flow form. This form identifies the fault as well as relevant conditions leading to a specific eight-character numeric-alphanumeric code.

6.6.6 These pages provide the conditions existing at the time the fault occurred and/or, when applicable, a cross-reference listing from self-test degree of severity and test number failed to a fault code. User may follow the known conditions flow ending at right side of page to obtain the fault code. If a fault code has been established from the FRM, the use of the fault identification and description page is not required. If a fault code has been established from a job guide, fault identification and description is not provided.

6.6.7 In either case, the description of the fault code, if desired, may be obtained from the log book report page of the affected system.

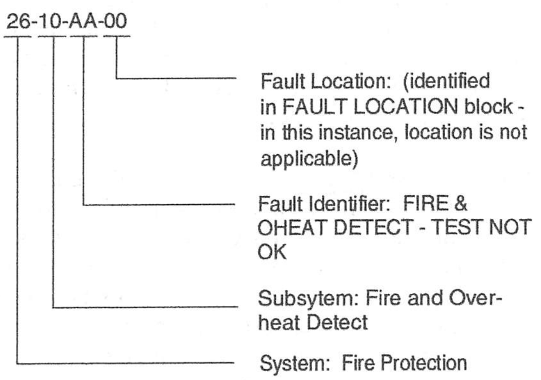
6.6.8 The alphanumeric code links the fault in the FRM and/or job guide to the corresponding solution steps used by

maintenance personnel. This continuity is established through the system/subsystem/sub-subsystem fault code composition.

6.6.9 As an example, a complete fault code as would appear on a fault identification page or in a job guide test result (except for location code) is as follows:

26-10-AA-00

6.6.10 The fault code elements are broken down as follows:



CO-00GV-00-1-0523X99

6.6.11 The two-letter fault identifier used to identify faults is assigned so that the first letter identifies the basic fault. The second letter identifies a subfault found within the basic fault. The letters A, B, and C, when used in the second-letter position, are reserved exclusively to designate basic faults (i.e., AA, AB, and AC are basic faults). The remaining letters of the alphabet, except for I and O, which are not used, are used to designate subfaults within the basic first-letter fault (i.e., AD, AE, AF, etc., are subfaults of the A basic fault). The letters X, Y, and Z, when used in the first-letter position, are reserved for exclusive use as the first entry for a single-entry fault (i.e., XD, XE, etc.). The numerical digits "00" are used in fault identifier for faults not listed. When similar faults appear in several subsystems, cross-referencing is used. Cross-referenced fault identifier codes may not necessarily appear in sequence. A complete listing of the fault identifier codes and word description of each system fault code are found in the associated log book report for each section in the manual. Each location in the system/subsystem/sub-subsystem is followed by a two-digit number, starting with 01. The numbers shall be in numerical order through the last location in the system/subsystem/sub-subsystem. If fault isolation procedures are identical (except for connectors, pins, relays, etc.) for similar/identical components, one fault code will be assigned and the fault location code will be left blank. Completion of the location code is the responsibility of the user. The last entry in the fault location block is NOT APPLICABLE 00. The locator codes are used to identify a fault to a specific item or section when the item is used in more than one place, i.e., left and right subassemblies - left main landing gear 01, right main landing gear 02, etc.

6.6.12 A log book report immediately follows the fault identification and description information. Each log book report contains complete word description of all coded faults and is furnished so that no other source of information is required by maintenance personnel to fully identify the malfunction. In the log book report, the fault identifier (fifth and sixth digits of the fault code) is followed by the complete word description as depicted on the fault identification and description page(s) or as set up in a job guide. Any deleted fault codes are added at the end of the log book report to identify those codes which have been deleted due to nonuse or aircraft configuration changes.

6.6.13 Access and locator data provide the means and location for gaining access to components except where obvious. This information is provided in either illustrated, written, or a combination of the two forms and immediately follows the log book report information. A locator view of the access door or panel for access to circuit breaker panels, identified on the fault identification and description page(s) when applicable, is included in the access and locator data. The placard noun of the circuit breaker panel is listed and the access door or panel number follows in parentheses.

6.6.14 The user will find the fault isolation procedure for the required fault code on the appropriate fault isolation procedure flow chart. The fault code is followed by a series of action instructions contained in rectangular block with the monitored results of the actions outside of the block. These actions terminate with fault correction instructions or reference to a schematic diagram or another system fault isolation manual for further fault analysis. The most probable corrective action for a fault is identified by a bold line along the bottom of the action block. The action blocks also contain any required reference to locator data, schematic or wiring diagrams, or job guide function in parentheses. All coded faults listed on the log book report page(s) are fault isolated except for basic faults (AA, BA, etc.) which utilize subfaults (AD, BE, etc.) to fault isolate. One isolation procedure may be used for several coded faults in order to reduce redundancy.

6.6.15 When identified faults have identical fault isolation procedures but are not in alphabetical sequence, the corrective action block refers to the fault code that has the isolation procedure (i.e., GO TO FAULT CODE 26-10-AD).

6.6.16 When supplemental data is required to support fault isolation procedures, additional information is provided in the form of tables, written text, and/or supporting illustrations.

This information is included in each applicable section. If applicable to all sections, the information is the last section.

6.6.17 The FIM contains system schematic diagrams located at the end of each section fault isolation procedure. The purpose of the schematics is to aid maintenance personnel in understanding the troubleshooting process stated in the fault isolation procedures and to assist in establishing troubleshooting procedures for faults not identified or not eliminated through the use of the fault isolation procedure.

6.7 Wiring Data Manuals. The Wiring Data (WD) Manuals provide wiring data for the entire vehicle. The set of Wiring Data Manuals consists of the following volumes:

Volume 1	Wiring Data Manual Introduction (TO 1F-16( )-2-00WD-00-1)
Volume 2	Wiring Data Manual Equipment List (TO 1F-16( )-2-00WD-00-2-1 through -5)
Volume 3	Wiring Data Manual Wire and Connection List (TO 1F-16( )-2-00WD-00-3-1 through -5)
Volume 4	Wiring Data Manual Wiring Diagrams (TO 1F-16( )-2-00WD-00-4)
Volume 5	Wiring Data Manual Wiring Diagrams (TO 1F-16( )-2-00WD-00-5)

6.8 Schematic Diagrams. System schematic diagrams are prepared in three levels of detail. The first level is referred to as a block system schematic, the second level is referred to as a simplified system schematic, and the third level is referred to as a detailed system schematic. The level(s) of schematic diagrams shown for each system depends on the system complexity and the amount of detail required to support fault isolation and system functional operation by maintenance personnel. The three levels are described as follows:

a. Block system schematic diagrams (level one). A block system schematic diagram is complete, on one page, for the system, subsystem, or sub-subsystem being depicted. The primary purpose of the block system schematic diagram is to provide a rapid understanding of the major replaceable units and their interrelationships. Signal flow information is limited to primary functions and does not include control, inhibiting, or interlocking. Graphic representation of replaceable units is limited to rectangular shapes with restricted use of symbols and pictorial drawings. Block system schematic diagrams are prepared for each system except in those instances where one or two sub-subsystems comprise the entire function.

b. Simplified system schematic diagrams (level two). A simplified system schematic diagram may be on more than one page. The primary purpose of simplified system schematic diagrams is to supplement the block or detail system schematic diagrams to provide a better understanding of the function or functions being performed. Simplified system schematic diagrams are prepared for systems, subsystems, or sub-subsystems. Graphic representation of replaceable units use rectangular shapes with a limited use of symbols and pictorial drawings.

c. Detailed system schematic diagrams (level three). A detailed system schematic diagram is prepared for each sub-subsystem except those of such simplicity that the interconnection diagrams provide complete technical and functional understanding. The primary purpose of the detailed system schematic diagram is to provide sufficient information for sub-subsystem maintenance. A sub-subsystem diagram may consist of more than one page.

6.9 Reference Designator. The reference designator is the identifier assigned to line replaceable units of the following types: relay matrices, relays, panels, circuit breakers, connectors, terminal strips, actuators, switches, sensors, pumps, valves, instruments, etc. The designator is composed of the functional system number, subsystem number, sub-subsystem number, equipment class letters, and unit number identifier (e.g., 2311K5 identifies communications system 23, UHF radio sub-subsystem 11, relay K, fifth relay). The same reference designator is used throughout the organizational maintenance manual set to identify the same line replaceable unit; therefore, the number is found in the Fault Reporting Manual, Fault Isolation Manual, Job Guide Manuals, Wiring Data Manuals, and Schematic Diagrams Manual and on the equipment.

6.10 Illustrated Parts Breakdown. The Illustrated Parts Breakdown (IPB) Manual is a multivolume manual which is sectionalized to coincide with the organizational maintenance manuals. The set of volumes is arranged as follows:

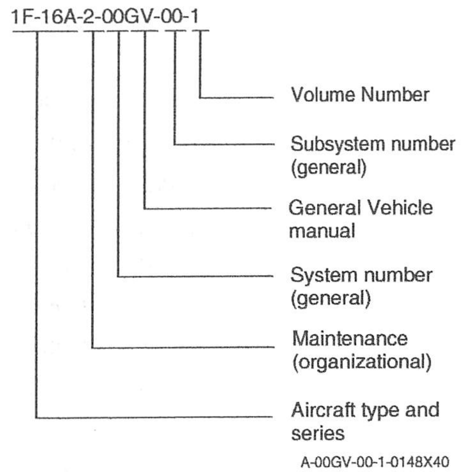
Volume 1	IPB Introduction (TO 1F-16( )-4-1)
Volume 2	IPB Numerical Index (TO 1F-16( )-4-2)
Volume 3	IPB Reference Designation Index (TO 1F-16( )-4-3)
Volume 4	IPB Maintenance Parts List (TO 1F-16( )-4-21 through TO 1F-16( )-4-99)

6.11 Structural Repair Manuals. The Structural Repair Manuals present methods and procedures for repair of damaged F-16 peculiar structures and components.

6.12 Inspection Manual and Workcards. The Inspection Manual and Workcards present inspection requirements for all areas/parts requiring inspection/lubrication/servicing.

6.13 Maintenance Manual Set Technical Order Numbering System. The numbering system illustrated below is

utilized to provide easy recognition of the different types of manuals that make up the maintenance manual set:



7. MAINTENANCE INTEGRATED DATA ACCESS SYSTEM (MIDAS).

7.1 System/Subsystem/Sub-Subsystem Subject Numbering System. The numbering system used to identify F-16 organizational maintenance manuals provides a means of dividing and identifying data into system, subsystem, sub-subsystem, and subject. The MIDAS is a six-digit numerical system expressed in three elements of two digits each (00-00-00). Using the fuel and in-flight refueling system as an example, the system/subsystem number is 28-00; this represents system 28 (fuel system) and subsystem 00 (general). Assuming that the subsystem information is pertinent to the fuel distribution system or to the fuel indicating system, the third digit changes to become 28-2 0 or 28-4 0, respectively. The numbers are assigned and defined as follows:

SYSTEM	SUBSYSTEM	TITLE
28		Fuel System
28	00	Fuel and In-Flight Refueling General
28	20	Fuel Distribution System
28	40	Fuel Indicating System

7.1.1 When the above numbers are applied to the organizational maintenance technical orders, the following manual numbers are generated:

TO NUMBER	MANUAL TITLE
TO 1F-16( )-2-28GS-00-1	Fuel and In-Flight Refueling General System
TO 1F-16( )-2-28JG-20-1	Fuel Distribution System Job Guide
TO 1F-16( )-2-28JG-40-1	Fuel Indicating System Job Guide

7.2 Sub-Subsystem Numbering. Complex subsystems require a further breakdown into sub-subsystems. This is indicated by the fourth digit in 34-54-02. In this case, the -54 is the A-G/IFF sub-subsystem of the dependent position determining subsystem of the navigation system. Similarly, -55 is the TACAN sub-subsystem.

NOTE

When complexity of the subsystem dictates a sub-subsystem breakdown, the application of the subsystem designator as shown herein is confined to the total subsystem; i.e., data identified by 34-50 is confined to the dependent position determining subsystem. A sub-subsystem cannot be identified in the second element unless a fourth-digit number is assigned.

7.3 Subject (Function) Numbering. The subject (function) number is assigned for the purpose of identifying further breakdown of the subsystem and sub-subsystem coverage. The numbering system at the subject (function) level identifies topics or tasks in the manuals of the organizational maintenance manual set. The assignment of the subject (function) numbers is keyed to the function/subject(s) of the Job Guide Manual(s) and is numbered consecutively through the coverage for the subsystem or sub-subsystem as applicable. The sub-subsystem digit as well as the subject (function) digits assigned to the fuel indicating systems (28-40) are composed as follows:

SYSTEM	SUB-SYSTEM	SUBJECT (FUNCTION)	ASSIGNMENT
28	40	00	MIDAS preassigned system number
28	40	00	MIDAS preassigned subsystem number
28	41	01	MIDAS preassigned sub-subsystem number

SYSTEM	SUB-SYS-TEM	SUBJECT (FUNCTION)	ASSIGN-MENT
28	41	01	Contractor assigned subject/function number

7.3.1 The number 28-41-01 appears on the lower outer corner of every page of the Fuel Indicating Systems Job Guide that is pertinent to the removal and installation of the fuel hot caution system temperature sensor. The number is also used in the terminal steps of the fault tree contained in the FRM and the FIM. This provides a constant ready reference index number from one manual to another for different types of data pertinent to a specific line replaceable unit or system.

8. AIRCRAFT DESIGNATION SYMBOLS.

The aircraft designation symbol A is used to identify functions or maintenance procedures applicable to F-16A aircraft. The aircraft designation symbol B is used to identify functions or maintenance procedures applicable to F-16B aircraft. Functions or maintenance procedures applicable to both models or obvious F-16B peculiar aft cockpit configurations or procedures will not be identified by aircraft designation symbols.

A F-16A Aircraft

B F-16B Aircraft

ADF Air Defense Fighter

9. AIR DEFENSE FIGHTER CONFIGURATION.

The Air Defense Fighter (ADF) configuration refers to F-16A and F-16B aircraft that have been retrofitted by Time Compliance Technical Order (TCTO) 1F-16-1488. Due to nonconsecutive aircraft serial numbers, condition, applicable aircraft will be listed in this paragraph only. Additionally, functions and/or maintenance procedures applicable only to ADF aircraft will be identified by the designation symbol ADF. Applicable aircraft are:

ADF A S/N 80-0541 → 80-0543,
80-0545,
80-0548 → 80-0550,
80-0552 → 80-0554,
80-0556,
80-0558 → 80-0561,
80-0563, 80-0565,
80-0567 → 80-0572,
80-0575 → 80-0581,
80-0583, 80-0587,
80-0588, 80-0591,
80-0593, 80-0594,
80-0596, 80-0598,
80-0601 → 80-0604,
80-0607, 80-0608,
80-0611 → 80-0616,
80-0619 → 80-0622,
81-0665, 81-0666,
81-0668, 81-0669,
81-0673 → 81-0675,
81-0680, 81-0681,
81-0682, 81-0685,
81-0686, 81-0690,
81-0691,
81-0694 → 81-0696,
81-0698 → 81-0703,
81-0705,
81-0707 → 81-0713,
81-0715, 81-0716,
81-0718 → 81-0720,
81-0722, 81-0723,
81-0725 → 81-0729,
81-0731 → 81-0744,
81-0746, 81-0748,
81-0749,
81-0751 → 81-0757,
81-0760 → 81-0765,
81-0767 → 81-0769,
81-0771 → 81-0778,
81-0780 → 81-0787,
81-0789, 81-0791,
81-0793, 81-0795,
81-0797, 81-0799,
81-0801, 81-0803,
81-0805, 81-0807,
81-0809, 81-0811,
82-0901, 82-0903,
82-0905, 82-0907,

82-0913,
82-0915 → 82-0917,
82-0919, 82-0921,
82-0923, 82-0926,
82-0929, 82-0932,
82-0935, 82-0942,
82-0945, 82-0947,
82-0950, 82-0951,
82-0953, 82-0956,
82-0958, 82-0960,
82-0963, 82-0966,
82-0967, 82-0969,
82-0972 → 82-0974,
82-0978, 82-0979,
82-0981, 82-0983,
82-0984, 82-0987,
82-0989, 82-0992,
82-0995, 82-0997,
82-1000, 82-1001,
82-1005, 82-1006,
82-1010 → 82-1012,
82-1016, 82-1019,
82-1021, 82-1023

Ⓑ S/N 80-0636, 80-0637,
81-0812, 81-0814,
81-0817 → 81-0820,
82-1026 → 82-1036,
82-1039 → 82-1046,
82-1048, 82-1049

10. AIRCRAFT EFFECTIVITY SYMBOLS.

Functions applicable to all aircraft will be indicated by "All" in "Applicability" on "Input Conditions" page. Aircraft effectivity symbols are used to identify functions or maintenance procedures to the applicable aircraft configuration. An arrow used between two aircraft serial numbers indicates consecutive serial numbers. An arrow used at the end of the serial numbers indicates an "and on" condition. The following symbols are used in this manual:

❶

USAF	Ⓐ	S/N	78-0001 →
	Ⓑ	S/N	78-0077 →

❷

BAF	Ⓐ	S/N	78-0116 →
BAF	Ⓑ	S/N	78-0162 →

❸

RDAF	Ⓐ	S/N	78-0174 →
RDAF	Ⓑ	S/N	78-00204 →

❹

RNLAF	Ⓐ	S/N	78-0212 →
RNLAF	Ⓑ	S/N	78-0259 →

❺

RNOAF	Ⓐ	S/N	78-0279 →
RNOAF	Ⓑ	S/N	78-0301 →
RNLAF	Ⓐ	S/N	85-0135 → 89-0021
RNLAF	Ⓑ	S/N	86-0064 →

❻

EPAF	Ⓐ	S/N	78-0116 → 78-0174 → 78-0212 → 78-0272 →
EPAF	Ⓑ	S/N	78-0162 → 78-0204 → 78-0259 → 78-0301 →

❼

USAF	Ⓐ	S/N	78-0001 →
EPAF	Ⓐ	S/N	78-0116 → 78-0174 → 80-3627 → 80-3648 78-0272 →
USAF	Ⓑ	S/N	78-0077 →
EPAF	Ⓑ	S/N	78-0162 → 78-0204 → 78-0301 →

AND

Prior to TCTO 1F-16-1312

EPAF	Ⓐ	S/N	78-0212 → 80-3626 81-0864 → 86-0055
EPAF	Ⓑ	S/N	78-0259 →

❽

EPAF	Ⓐ	S/N	86-0056 →
EPAF	Ⓑ	S/N	86-0064 →

AND

After TCTO 1F-16-1312

EPAF	Ⓐ	S/N	78-0212 → 80-3626 81-0864 → 86-0055
EPAF	Ⓑ	S/N	78-0259 → 84-1369

9

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0272 → 78-0307
USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0301 → 78-0307

AND

Prior to TCTO 1F-16-1312

EPAF	A	S/N	78-0212 → 78-0257
EPAF	B	S/N	78-0259 → 78-0271

10

After TCTO 1F-16-1312

RNLAF	A	S/N	78-0212 → 78-0257
RNLAF	B	S/N	78-0259 → 78-0271

11

USAF	A	S/N	80-0541→
EPAF	A	S/N	80-3547 → 80-3596 → 80-3627 → 80-3648 80-3658 →
USAF	B	S/N	80-0635→
EPAF	B	S/N	80-3588 → 80-3612 → 80-3689 →

AND

Prior to TCTO 1F-16-1312

EPAF	A	S/N	78-0258 → 80-3626 81-0864 → 86-0055
EPAF	B	S/N	80-3649 → 84-1369

12

EPAF	A	S/N	86-0056 →
EPAF	B	S/N	86-0064 →

AND

After TCTO 1F-16-1312

EPAF	A	S/N	78-0258 → 80-3626 81-0864 → 86-0055
EPAF	B	S/N	80-3649 → 84-1369

13 Aircraft not applicable to ADF configuration

14

EPAF	A	S/N	78-0174 → 78-0272 →

15

Prior to TCTO 1F-16-1331

BAF	A	S/N	80-3547 → 85-3587
BAF	B	S/N	80-3588 → 80-3595

16

USAF	A	S/N	79-0358 → 80-0627
EPAF	A	S/N	78-0146 → 80-3595 78-0195 → 80-3611 78-0243 → 80-3648 78-0290 → 80-3688
USAF	B	S/N	79-0424 →
EPAF	B	S/N	78-0172 → 78-0173 78-0210 → 80-3615 78-0268 → 80-3657 78-0306 → 80-3693

AND

After TCTO 1F-16-783

USAF	A	S/N	78-0001 → 79-0357
EPAF	A	S/N	78-0116 → 78-0145 78-0174 → 78-0194 78-0212 → 78-0242 78-0272 → 78-0289
USAF	B	S/N	78-0077 → 79-0423
EPAF	B	S/N	78-0162 → 78-0171 78-0204 → 78-0209 78-0259 → 78-0267 78-0301 → 78-0305

17

After TCTO 1F-16-1331

BAF	A	S/N	80-3547 → 85-3587
BAF	B	S/N	80-3588 → 80-3595

18

BAF	A	S/N	78-0146 →
BAF	B	S/N	78-0172 →

19

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

20

USAF	A	S/N	80-0541 →
EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →
USAF	B	S/N	80-0635 →
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

21

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

22

Prior to TCTO 1F-16-1516

BAF	A	S/N	78-0116 → 80-3546
BAF	B	S/N	78-0162 → 78-0173

23

After TCTO 1F-16-1516

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-3612 → 78-0211 80-3649 → 78-0271 80-3689 → 78-0307

24

Prior to TCTO 1F-16-1516

BAF	A	S/N	78-0116 → 78-0132
BAF	B	S/N	78-0162 → 78-0167

25

Prior to TCTO 1F-16-1516

BAF	A	S/N	78-0133 → 80-3546
BAF	B	S/N	78-0168 → 78-0173

26

After TCTO 1F-16-1516

USAF	A		78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B		78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

27

After TCTO 1F-16-1516

USAF	A		78-0001 → 78-0021
EPAF	A	S/N	78-0116 → 78-0132 78-0212 → 78-0223
USAF	B		78-0077 → 78-0098
EPAF	B	S/N	78-0162 → 78-0167 78-0259 → 78-0264

28

After TCTO 1F-16-1516

USAF	A		78-0022 → 80-0540
EPAF	A	S/N	78-0133 → 80-3546 78-0174 → 78-0203 78-0224 → 78-0257 78-0272 → 78-0299
USAF	B		78-0099 → 80-0634
EPAF	B	S/N	78-0168 → 78-0173 78-0204 → 78-0211 78-0265 → 78-0271 78-0301 → 78-0307

29

RNOAF	B	S/N	87-0711, 87-0712

30

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

31

USAF	A	S/N	80-0541 →
EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →

32

USAF	B	S/N	80-0635 →
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

33

USAF	A	S/N	78-0001 → 83-1066
EPAF	A	S/N	78-0116 → 80-3584 78-0174 → 80-3611 78-0212 → 81-0867 78-0272 → 80-3688
USAF	B	S/N	78-0077 → 83-1166
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 81-0883 78-0301 → 80-3693

34

USAF	B	S/N	78-0077 → 80-0628
EPAF	B	S/N	78-0162 → 78-0171 78-0204 → 78-0209 78-0259 → 78-0268 78-0301 → 78-0305

35

USAF	B	S/N	80-0629 → 80-0634
EPAF	B	S/N	78-0172 → 78-0173 78-0210 → 78-0211 78-0269 → 78-0271 78-0306 → 78-0307

36

USAF	B	S/N	80-0541 → 83-1072
EPAF	B	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 81-0872 78-0300 → 80-3688

37

USAF	A	S/N	83-1073 →
EPAF	A	S/N	81-0873 → 84-1365

38

EPAF	A	S/N	86-0073 → 87-0004 → 84-1366 →

39

EPAF	A	S/N	80-3627 → 81-0864 81-0866 → 81-0870

40

USAF	A	S/N	78-0001 → 79-0369
EPAF	A	S/N	78-0116 → 78-0146 78-0174 → 78-0195 78-0212 → 78-0244 78-0272 → 78-0289

41

USAF	A	S/N	79-0370 → 80-0540
EPAF	A	S/N	78-0147 → 80-3546 78-0196 → 78-0203 78-0245 → 78-0257 78-0290 → 78-0299

42

USAF	A	S/N	78-0001 → 80-0485
EPAF	A	S/N	78-0116 → 80-3542 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0625
EPAF	B	S/N	78-0162 → 78-0172 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

43

USAF	A	S/N	80-0486 → 80-0540
EPAF	A	S/N	80-3543 → 80-3546
USAF	B	S/N	80-0626 → 80-0634
EPAF	B	S/N	78-0173

44

USAF	A	S/N	80-0541 → 80-0605
EPAF	A	S/N	80-3547 → 80-3550 80-3596 → 80-3605 78-0258 → 80-3627 78-0300 → 80-3667
USAF	B	S/N	80-0635 → 80-0637
EPAF	B	S/N	80-3588 → 80-3591 80-3612, 80-3613 80-3649 → 80-3651 80-3689 → 80-3690

45

USAF	A	S/N	80-0606 → 81-0704
EPAF	A	S/N	80-3551 → 80-3558 80-3606 → 80-3610 80-3628 → 80-3634 80-3668 → 80-3671
USAF	B	S/N	80-0638 → 81-0812
EPAF	B	S/N	80-3592 → 80-3595 80-3614, 80-3652, 80-3653 80-3691

46

USAF	A	S/N	80-0705 →

EPAF	A	S/N	80-3559 → 80-3611 → 80-3635 → 80-3672 →
USAF	B	S/N	81-0813 →
EPAF	B	S/N	87-0001 → 80-3615 → 80-3654 → 80-3692 →

47

Prior to TCTO 1F-16B-516

EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271

48

USAF	B	S/N	78-0079 → 80-0639
EPAF	B	S/N	80-3612 → 80-0639 80-3649 → 80-3657 80-3689 →

AND

After TCTO 1F-16B-516

USAF	B	S/N	78-0077
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

49

Prior to TCTO 1F-16A-532

EPAF	A	S/N	78-0174 → 78-0203 78-0272 → 78-0299

50

Prior to TCTO 1F-16A-532

EPAF	A	S/N	80-3596 → 80-3611 78-0300 → 80-3688

51

After TCTO 1F-16A-532

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

52

After TCTO 1F-16A-532

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 83-1196 78-0300 → 80-3688

53

EPAF	A	S/N	86-0073 → 90-0027 87-0004 → 88-0018 84-1366 → 89-0021

AND

After TCTO 1F-16A-534

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 83-1196 78-0300 → 80-3688

60

USAF	A	S/N	78-0001 → 82-1025
EPAF	A	S/N	78-0116 → 80-3583 78-0174 → 80-3611 78-0212 → 81-0869 78-0272 → 80-3688
USAF	B	S/N	78-0077 → 82-1049
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 81-0883 78-0301 → 80-3693

61

USAF	A	S/N	83-1066 →
EPAF	A	S/N	80-3584 → 81-0870 →
USAF	B	S/N	83-1166 →
EPAF	B	S/N	80-3615 → 81-0884 →

62

USAF	A	S/N	80-0541 → 80-0598
EPAF	A	S/N	80-3547 → 80-3550 80-3596 → 80-3605 78-0258 → 80-3628 78-0300 → 80-3667
USAF	B	S/N	80-0635 → 80-0636
EPAF	B	S/N	80-3588 → 80-3591 80-3612 → 80-3613 80-3649 → 80-3651 80-3689 → 80-3690

63

USAF	A	S/N	80-0599→
EPAF	A	S/N	80-3551 → 80-3606 → 80-3629 → 80-3668 →
USAF	B	S/N	80-0637 →
EPAF	B	S/N	80-3592 → 80-3614 → 80-3652 → 80-3691 →

64

USAF	A	S/N	80-0541 → 82-0963
EPAF	A	S/N	80-3547 → 80-3572 80-3596 → 78-0258 → 80-3644 78-0300 → 80-3684
USAF	B	S/N	80-0635 → 82-1036, 82-1039
EPAF	B	S/N	80-3588 → 80-3612 → 80-3614 80-3649 → 80-3657 80-3689 →

65

USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

66

USAF	B	S/N	78-0077 →
EPAF	B	S/N	78-0162 → 78-0204 → 78-0259 → 78-0301 →

67

USAF	B	S/N	80-0635→
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

68

USAF	A	S/N	78-0001 → 82-0944, 82-0966, 82-0974
EPAF	A	S/N	78-0212 → 80-3645 78-0116 → 80-3570 78-0272 → 80-3683
USAF	B	S/N	78-0077 → 82-1033, 82-1035, 82-1036, 82-1039
EPAF	B	S/N	78-0259 → 80-3657 78-0204 → 80-3614

69

USAF	A	S/N	82-0945 → 82-0965 82-0967 → 82-0973 82-0975 →
EPAF	A	S/N	80-3571 → 80-3646 → 80-3658 →
USAF	B	S/N	82-1034, 82-1037, 82-1038, 82-1040 →
EPAF	B	S/N	80-3615 →

70

USAF	A	S/N	78-0001 → 82-0924
EPAF	A	S/N	78-0116 → 80-3562 78-0174 → 80-3611 78-0212 → 80-3641 78-0272 → 80-3675
USAF	B	S/N	78-0077 → 82-1028
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 80-3655 78-0301 → 80-3693

71

USAF	A	S/N	83-1107 →
EPAF	A	S/N	83-0880 →
EPAF	B	S/N	83-1208 →

AND

After TCTO 1F-16-1107

USAF	A	S/N	78-0001 → 83-1106
EPAF	A	S/N	78-0212 → 81-0879
USAF	B	S/N	78-0077 → 83-1173
EPAF	B	S/N	78-0259 → 83-0885

72

USAF	A	S/N	82-0925 →
EPAF	A	S/N	80-3563 → 80-3642 → 80-3676 →
USAF	B	S/N	82-1029
EPAF	B	S/N	80-3615 → 80-3656 →

AND

After TCTO 1F-16-1138

USAF	A	S/N	78-0001 → 82-0924
EPAF	A	S/N	78-0116 → 80-3562 78-0174 → 80-3611 78-0212 → 80-3641 78-0272 → 80-3675
USAF	B	S/N	78-0077 → 82-1028
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 80-3655 78-0272 → 80-3693

73

USAF	A	S/N	78-0001 → 83-1106
USAF	B	S/N	78-0077 →

74

USAF	A	S/N	78-0001 → 83-1106

EPAF A S/N 78-0116 → 78-0174 → 78-0212 → 81-8769 78-0272 →

USAF B S/N 78-0077 →

EPAF B S/N 78-0162 → 78-0204 → 78-0259 → 81-0885 78-0301 →

75

USAF A S/N 83-1107 →

EPAF A S/N 81-0880 →

EPAF B S/N 83-1208 →

76

Prior to TCTO 1F-16-1365

USAF A S/N 78-0001 → 83-1117

EPAF A S/N 78-0116 → 80-3587 78-0174 → 80-3611

USAF B S/N 78-0077 → 83-1173

EPAF B S/N 78-0162 → 80-3595 78-0204 → 80-3615

77

USAF A S/N 82-0964 →

EPAF A S/N 80-3573 → 80-3645 → 80-3685 →

USAF B S/N 82-1037, 82-1038, 82-1040 →

EPAF B S/N 80-3615 → 81-0882 →

78

USAF A S/N 82-0996 →

EPAF A S/N 80-3584 → 81-0870 →

USAF B S/N 82-1044 →

EPAF B S/N 81-0884 →

79

EPAF A S/N 86-0073 → 87-0004 → 83-1207 →

EPAF B S/N 87-0001 → 86-0197 → 84-1368 →

80

USAF A S/N 78-0001 → 80-0540

EPAF A S/N 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

USAF B S/N 78-0077 → 80-0634

EPAF B S/N 78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

81

EPAF A S/N 78-0116 → 80-3546

82

EPAF A S/N 78-0174 → 78-0203 78-0272 → 78-0299

83

EPAF A S/N 80-3596 → 78-0300 →

84

USAF A S/N 83-1066 →

EPAF A S/N 80-3584 → 81-0870 →

USAF B S/N 83-1166 →

EPAF B S/N 80-3615 → 81-0884 →

AND

After TCTO 1F-16-1208

USAF A 78-0001 → 82-1025

EPAF A 78-0116 → 80-3583 78-0174 → 80-3611 78-0212 → 81-0869 78-0272 → 80-3688

USAF B S/N 78-0077 → 82-1049

EPAF B S/N 78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 81-0883 78-0301 → 80-3693

85

EPAF A S/N 86-0073 → 90-0027 87-0004 → 88-0018 84-1362 → 89-0021

EPAF B S/N 87-0001 → 89-0012 86-0197 → 87-0022 84-1369 → 87-0068

86

EPAF A S/N 86-0073 → 84-1366 →

87

USAF A S/N 78-0001 → 83-1117

EPAF A S/N 78-0116 → 83-3587 78-0174 → 80-3611 78-0212 → 85-0140 78-0272 → 80-3688

USAF B S/N 78-0077 → 83-1173

EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3615 78-3615 → 84-1369 78-0884 → 80-3693

88

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

89

EPAF	A	S/N	86-0073 → 87-0004 → 85-0141 →
EPAF	B	S/N	87-0001 → 86-0197 → 86-0064 →

AND

After TCTO 1F-16-1331

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 →80-358780-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

90

EPAF	A	S/N	86-0073 → 87-0004 → 85-0141 →
EPAF	B	S/N	87-0001 → 86-0197 → 86-0054 → 87-0711, 87-0712

AND

After TCTO 1F-16-1331

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 →80-3587 80-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

91

After TCTO 1F-16-1331

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 →80-358780-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

92

After TCTO 1F-16-1331

BAF	A	S/N	80-3547 →80-3587
EPAF	B	S/N	80-3588 → 80-3595

93

Aircraft	A	S/N	78-0001 → 78-0010
	B	S/N	78-0077 → 78-0088

94

Aircraft equipped with F-100-PW-200 engine

95

Aircraft equipped with F-100-PW-220/220E engine

96

BAF	A	S/N	78-0116 → 80-3546
BAF	B	S/N	78-0162 → 78-0173

97

BAF	A	S/N	80-3547 →
BAF	B	S/N	80-3588 →

98

RDAF	A	S/N	78-0174 → 78-0203
RDAF	B	S/N	78-0204 → 78-0211

99

RDAF	A	S/N	80-3596 →
RDAF	B	S/N	80-3612 →

100

RNLAF	A	S/N	78-0212 → 78-0257
RNLAF	B	S/N	78-0259 → 78-0271

101

RNLAF	A	S/N	78-0258 →
RNLAF	B	S/N	80-3649 →

102

RNOAF	A	S/N	78-0272 → 78-0299
RNOAF	B	S/N	78-0301 → 78-0307

103

RNOAF	A	S/N	78-0300 →
RNOAF	B	S/N	80-3689 →

104

EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

105

EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

106

USAF	A	S/N	78-0001 → 81-0810
EPAF	A	S/N	78-0116 → 80-3579 78-0174 → 80-3611 78-0212 → 80-3643 78-0272 → 80-3684
USAF	B	S/N	78-0077 → 81-0819
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3614 78-0259 → 80-3657 78-0301 → 80-3693

107

USAF	A	S/N	81-0811 →
EPAF	A	S/N	80-3580 → 80-0004 → 80-3644 → 80-3685 →
USAF	B	S/N	81-0820 →
EPAF	B	S/N	87-0001 → 80-3615 → 81-0882 →

108

USAF	A	S/N	80-0541 →
EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →
USAF	B	S/N	80-0813 →
EPAF	B	S/N	80-3591 → 80-3614 → 80-3651 → 80-3691 →

109

USAF	B	S/N	80-0635 → 80-0812
EPAF	B	S/N	80-3588 → 80-3590 80-3612 → 80-3613 80-3649 → 80-3650 80-3689 → 80-3690

110

EPAF	A	S/N	86-0073 → 87-0004 → 85-0141 →
EPAF	B	S/N	87-0001 → 86-0197 → 86-0064 → 87-0711, 87-0712

AND

After TCTO 1F-16-1365

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	80-3547 →80-358780-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

113

BAF	A	S/N	86-0073 →

114

After TCTO 1F-16-1411

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

115

After TCTO 1F-16-1411

USAF	A	S/N	80-0541 → 83-1117

EPAF	A	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 85-0140 78-0300 → 80-3688
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 84-1369 80-3689 → 80-3693

116

After TCTO 1F-16-1411

USAF	A	S/N	80-0541 → 83-1117
EPAF	A	S/N	78-0116 → 80-3587 78-0174 → 80-3611 78-0212 → 85-0140 78-0272 → 80-3688
USAF	B	S/N	78-0077 → 83-1173
EPAF	B	S/N	78-0162 → 80-3595 78-0204 → 80-3615 78-0259 → 84-1369 78-0301 → 80-3693

117

RNOAF	B	S/N	78-0301 → 78-0307

118

EPAF	A	S/N	78-0195 → 78-0203 78-0272 → 78-0299
EPAF	B	S/N	78-0301 → 78-0307

119

EPAF	A	S/N	78-0189 → 78-0203 78-0272 → 78-0299
EPAF	B	S/N	78-0301 → 78-0307

120

EPAF	A	S/N	80-3596 → 78-0300 →

121

BAF	A	S/N	80-3547 →

122

USAF	A	S/N	78-0001 →
EPAF	A	S/N	78-0116 → 78-0174 → 78-0212 → 85-0146 78-0272 →
USAF	B	S/N	78-0077 →
	B	S/N	78-0162 → 78-0204 → 78-0259 → 84-1369 78-0301 →

123

EPAF	A	S/N	86-0054 →
EPAF	B	S/N	86-0064 →

124

BAF	A	S/N	78-0001 → 79-0331

125

USAF	A	S/N	80-0541 → 81-0811
EPAF	A	S/N	80-3547 → 80-3562 80-3596 → 80-3611 78-0258 → 80-3641 78-0300 → 80-3675

126

USAF	B	S/N	80-0629 → 80-0634
RDAF	B	S/N	78-0208 → 78-0211

127

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0628
	B	S/N	78-0162 → 78-0173 78-0204 → 78-0207 78-0259 → 78-0271 78-0301 → 78-0307

128

Prior to TCTO 1F-16-1482

USAF	A	S/N	78-0001 → 83-1114
EPAF	A	S/N	78-0174 → 88-0018 78-0212 → 89-0021 78-0272 → 80-3688
USAF	B	S/N	78-0077 → 83-1173
EPAF	B	S/N	78-0204 → 87-0022 78-0259 → 87-0068 78-0301 → 87-0712

129

After TCTO 1F-16-1482

EPAF	A	S/N	78-0174 → 88-0018 78-0212 → 89-0021 78-0272 → 80-3688
EPAF	B	S/N	78-0204 → 87-0022 78-0259 → 87-0068 78-0301 → 87-0712

130
After TCTO 1F-16-1482

EPAF	B	S/N	78-0204 → 78-0207 78-0259 → 78-0271 78-0301 → 78-0307

131
After TCTO 1F-16-1482

EPAF	B	S/N	78-0208 → 78-0211

132
After TCTO 1F-16-1482

EPAF	B	S/N	80-3612 → 87-0022 80-3649 → 87-0068 78-0308 → 87-0712

133

USAF	A	S/N	80-0541 → 83-117
EPAF	A	S/N	80-3547 → 80-3596 → 78-0258 → 78-0300 →
USAF	B	S/N	80-0635 → 83-1173
EPAF	B	S/N	80-3588 → 80-3612 → 80-3649 → 80-3689 →

AND

After TCTO 1F-16-1516

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299
USAF	B	S/N	78-0077 → 80-0634
EPAF	B	S/N	78-0162 → 78-0173 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

134
Prior to TCTO 1F-16-1516

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

135
After TCTO 1F-16-1516

USAF	A	S/N	78-0001 → 80-0540
EPAF	A	S/N	78-0116 → 80-3546 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

136 Aircraft not applicable to ADF configuration

137

RNLAF	A	S/N	81-0864, 81-0866 → 81-0870

138

USAF	A	S/N	78-0001 → 79-0331
EPAF	A	S/N	78-0116 → 78-0140 78-0174 → 78-0188 78-0212 → 78-0237 78-0272 → 78-0284

139
Prior to TCTO 1F-16-1638

BAF	A	S/N	86-0073 → 86-0077
BAF	B	S/N	87-0001

140
After TCTO 1F-16-1638

USAF	A	S/N	81-0663 → 81-0667 81-0670, 81-0676 → 81-0679 81-0683, 81-0687
EPAF	A	S/N	86-0054 → 87-0513
USAF	B	S/N	80-0638, 81-0815
EPAF	B	S/N	86-0064 → 87-0068

141 Aircraft seat equipped with fixed environmental sensor pitots

142 Aircraft seat equipped with flip-up environmental sensor pitots

143 Aircraft seat equipped with SEAWARS

144 Aircraft seat equipped with RESTRAINT EMERGENCY RELEASE handle, Wiggins quick-disconnect coupling assembly, and no backup parachute deployment system

145 Aircraft seat equipped with EMERGENCY MANUAL CHUTE handle, Snap-Tite quick-disconnect coupling assembly, and backup parachute deployment system

146 Aircraft seat equipped with pylon integrated dispenser system (PIDS-3)

147
Prior to TCTO 1F-16-1696

USAF	A	S/N	78-0001 → 83-1117

USAF B S/N 78-0077 → 83-1173

148

EPAF A S/N 88-0011 →

AND

After TCTO 1F-16-1696

USAF A S/N 78-0001 → 83-1117

EPAF A S/N 78-0116 → 89-0011 78-0174 → 88-0018 78-0212 → 88-0010 78-0272 → 80-3688

USAF B S/N 78-0077 → 83-1173

EPAF B S/N 78-0162 → 89-0012 78-0204 → 87-0022 78-0259 → 87-0068 78-0301 → 87-0712

149

After TCTO 1F-16-1704

USAF A S/N 78-0001 → 80-0540

EPAF A S/N 78-0174 → 78-0203 78-0212 → 78-0257 78-0272 → 78-0299

USAF B S/N 78-0077 → 80-0634

EPAF B S/N 78-0204 → 78-0211 78-0259 → 78-0271 78-0301 → 78-0307

150

After TCTO 1F-16-1704

AND

Prior to TCTO 1F-16-1735

USAF A S/N 78-0001 → 83-1117

USAF B S/N 78-0077 → 83-1173

151

Prior to TCTO 1F-16-1704

USAF A S/N 78-0001 → 80-0540

USAF B S/N 78-0077 → 80-0634

151

After TCTO 1F-16-1704

USAF A S/N 78-0001 → 80-0540

USAF B S/N 78-0077 → 80-0634

152

After TCTO 1F-16-1704

USAF A S/N 80-0541 → 80-0622, 81-0664 → 81-0666, 81-0668, 81-0669, 81-0671 → 81-0675, 81-0680 → 81-0682, 81-0684 → 81-0686, 81-0688 → 81-1117

USAF B S/N 80-0635 → 80-0637 81-0812 → 81-0814 81-0816 → 83-1173

153

After TCTO 1F-16-1704

USAF A S/N 81-0663 → 81-0667, 81-0670, 81-0676 → 81-0679, 81-0683, 81-0687

USAF B S/N 80-0638, 81-0815

154

Prior to TCTO 1F-16-1704

USAF A S/N 78-0001 → 80-0540

USAF B S/N 78-0077 → 80-0634

155

After TCTO 1F-16-1704

USAF A S/N 80-0541 → 83-1117

USAF B S/N 80-0635 → 83-1173

156

After TCTO 1F-16-1735

USAF A S/N 78-0001 → 83-1117

USAF B S/N 78-0077 → 83-1173

157

EPAF A S/N 87-0514 →

159

Prior to TCTO NE1F-16-6001

RNLAF A S/N 78-0212 → 78-0257

RNLAF B S/N 78-0259 → 78-0271

160

After TCTO NE1F-16-6001

RNLAF A S/N 78-0212 → 78-0257

RNLAF B S/N 78-0259 → 78-0271

161

USAF A S/N 78-0001 → 80-0540

USAF B S/N 78-0077 → 80-0634

162

BAF A S/N 78-0116 → 80-3546

BAF B S/N 78-0162 → 78-0173

163

RDAF A S/N 78-0174 → 78-0203

RDAF B S/N 78-0204 → 78-0211

164

RNLAF A S/N 78-0212 → 78-0257

RNLAF B S/N 78-0259 → 78-0271

165

RNOAF A S/N 78-0272 → 78-0299

RNOAF B S/N 78-0301 → 78-0307

166

USAF A S/N 80-0541 → 83-1117

USAF B S/N 80-0635 → 83-1173

167

BAF A S/N 80-3547 → 90-0027

BAF B S/N 80-3588 → 89-0012

168

RDAF A S/N 80-3596 → 88-0018

RDAF B S/N 80-3612 → 87-0022

169

RNLAF A S/N 78-0258 → 89-0021

RNLAF B S/N 80-3649 → 87-0068

170

RNOAF A S/N 78-0301 → 80-3688

RNOAF B S/N 80-3689 → 87-0712

171

USAF A S/N 78-0001 → 83-1117

USAF B S/N 78-0077 → 83-1173

172

BAF A S/N 78-0116 → 90-0027

BAF B S/N 78-0162 → 78-0173

173

RDAF A S/N 78-0174 → 88-0018

RDAF B S/N 78-0204 → 87-0022

174

RNLAF A S/N 78-0212 → 89-0021

RNLAF B S/N 78-0259 → 87-0068

175

RNOAF A S/N 78-0272 → 80-3688

RNOAF B S/N 78-0301 → 87-0712

176

USAF A S/N 79-0332 → 80-0540

EPAF A S/N 78-0141 → 80-3546 78-0198 → 78-0203 78-0238 → 78-0257 78-0285 → 78-0307

EPAF B S/N 78-0172, 78-0173 78-0209 → 78-0211 78-0267 → 78-0271 78-0305 → 78-0307

177

USAF A S/N 78-0001 → 79-0385

EPAF A S/N 78-0116 → 78-0152 78-0174 → 78-0197 78-0212 → 78-0249 78-0272 → 78-0293

USAF B S/N 78-0077 → 79-0428

EPAF B S/N 78-0162 → 78-0172 78-0204 → 78-0210 78-0259 → 78-0268 78-0301 → 78-0305

178

USAF A S/N 78-0001 → 79-0021

EPAF A S/N 78-0116 → 78-0132 78-0212 → 78-0223

USAF B S/N 78-0077 → 78-0098

EPAF B S/N 78-0162 → 78-0167 78-0259 → 78-0264

179

USAF A S/N 78-0022 → 80-0540

EPAF A S/N 78-0133 → 80-3546 78-0224 → 78-0257

USAF B S/N 78-0099 → 80-0634

EPAF B S/N 78-0168 → 78-0173 78-0265 → 78-0271

180

USAF A S/N 80-0541 → 82-1009

EPAF A S/N 80-3547 → 80-3582 80-3596 → 80-3611 78-0258 → 81-0867

USAF B S/N 80-0635 → 82-1046

EPAF B S/N 80-3588 → 80-3595 80-3612 → 80-3614 80-3649 → 80-0882

181

USAF	A	S/N	82-1010 → 83-1117
EPAF	A	S/N	80-3583 → 90-0027 87-0004 → 88-0018 81-0868 → 89-0021
USAF	B	S/N	82-1047 → 83-1173
EPAF	B	S/N	87-0001 → 89-0012 80-3615 → 87-0022 81-0884 → 87-0068

182

USAF	A	S/N	80-0541 → 82-0986
EPAF	A	S/N	80-3547 → 82-0986 80-3596 → 80-3611 78-0258 → 81-0864
USAF	B	S/N	80-0635 → 82-1041
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3614 80-3649 → 81-0882 80-3689 → 80-3693

183

USAF	A	S/N	82-0987 → 83-1117
EPAF	A	S/N	80-3579 → 90-0027 80-0004 → 88-0018 81-0865 → 89-0021
USAF	B	S/N	82-1042 → 83-1173
EPAF	B	S/N	87-0001 → 89-0012 80-3615 → 87-0022 81-0884 → 87-0068 87-0711, 80-0712

184

USAF	A	S/N	82-0945 → 82-0965, 82-0967 → 82-0973, 82-0975 → 83-1117
EPAF	A	S/N	86-0073 → 90-0027 87-0004 → 88-0018 80-3646 → 89-0021 80-3684 → 80-3688
USAF	B	S/N	82-1042 → 82-1037, 82-1038, 82-1042 → 83-1173
EPAF	B	S/N	87-0001 → 89-0012 86-0197 → 87-0022 81-0882 → 87-0068 87-0711, 80-0712

185

USAF	A	S/N	80-0541 → 82-0944
EPAF	A	S/N	80-3547 → 80-3570 80-3596 → 80-3611 78-0258 → 80-3645 78-0300 → 80-3683
USAF	B	S/N	80-0635 → 82-1033
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3614 80-3649 → 80-3657 80-3689 → 80-3693

186

USAF	A	S/N	82-0945 → 83-1117
EPAF	A	S/N	82-0945 → 90-0027 87-0004 → 88-0018 80-3646 → 89-0021 80-3684 → 80-3688
USAF	B	S/N	82-1034 → 83-1173
EPAF	B	S/N	87-0001 → 89-0012 80-3615 → 87-0022 81-0882 → 87-0068 87-0711, 80-0712

187

EPAF	A	S/N	80-3547 → 80-3587 80-3596 → 80-3611 78-0258 → 83-1196
EPAF	B	S/N	80-3588 → 80-3595 80-3612 → 80-3615 80-3649 → 83-1209 80-3689 → 80-3693

188

EPAF	A	S/N	86-0073 → 90-0027 87-0004 → 88-0018 83-1197 → 89-0021
EPAF	B	S/N	87-0001 → 89-0012 86-0197 → 87-0022 83-1210 → 87-0068 87-0711, 87-0712

189

BAF	A	S/N	80-3547 → 88-0042

190

BAF	A	S/N	88-0043 → 90-0027

191

RNLAF	A	S/N	80-3627 → 81-0864, 81-0866 → 81-0870

192

RNLAF	A	S/N	80-3627 → 80-3648

193
RNLAF A S/N 87-0513 → 89-0021

194
EPAF A S/N 88-0049, 89-0012, 87-0067, 87-0068

195
RNLAF A S/N 78-0258 → 80-3629

196
RNLAF A S/N 80-3627 → 80-3648

197 Block 10 Aircraft

198 Block 15 Aircraft

199
EPAF A S/N 78-0174 → 78-0208 78-0272 → 78-0299

200
After TCTO 1F-16-1340 and prior to TCTO 1F-16-1790
USAF A S/N 80-0551, 80-0557, 80-0564 80-0573, 80-0584, 80-0586 80-0595, 80-0599, 80-0600 80-0606, 80-0609, 80-0617 81-0663, 81-0664, 81-0667 81-0670, 81-0676 → 81-0679, 81-0683, 81-0687, 81-0688 81-0692, 81-0724, 81-0730 81-0745, 81-0750, 81-0761 81-0788, 81-0790, 81-0792 81-0794, 81-0796, 81-0798 81-0800, 81-0802, 81-0804 81-0806, 81-0808, 81-0810 82-0900, 82-0902, 82-0904 82-0906, 82-0908, 82-0911 82-0914, 82-0918, 82-0920 82-0922, 82-0924, 82-0925 82-0927, 82-0928, 82-0931 82-0933, 82-0936, 82-0938 → 82-0941, 82-0943,82-0944, 82-0946, 82-0948 82-0949, 82-0952, 82-0954, 82-0957, 82-0959, 82-0962 82-0964, 82-0965, 82-0968 82-0970, 82-0971, 82-0975 → 82-0977, 82-0980, 82-0982, 82-0985, 82-0986, 82-0988, 82-0991, 82-0993 82-0996, 82-0998, 82-0999 82-1002, 82-1004, 82-1007 82-1009, 82-1011, 82-1013 82-1015, 82-1017, 82-1018 82-1020, 82-1022, 82-1024 → 83-1117

201
EPAF B S/N 87-0711, 87-0712

11. REFERENCE DESIGNATOR USAGE.

In some cases, two reference designators have been assigned to the same aircraft component. Where dual reference designator assignment has occurred, the reference designator decaled on an aircraft component will be shown first and the second reference designator, not decaled on the aircraft component, will appear in parentheses following the first reference designator. These dual reference designators, where applicable, will only be shown in the schematic diagrams within the manual. The dual reference designators are provided in this manual for ease of cross-referencing between reference designators found decaled on aircraft components and what may appear in Job Guide (JG), Fault Reporting (FR), Fault Isolation (FI), and General System (GS) manuals.

12. DOCUMENT REFERENCES.

Throughout this manual the country codes and block identifiers within TO references have been omitted intentionally. The current TO country code and block identifier located on the title page is applicable to the TO references within this manual. A reference that contains the block identifier indicates that the reference is to an alternative block aircraft manual. The TO references are symbolic of USAF TOs and not intended as authorization to use or procure USAF TOs.

1F-16( )-2-70FI-00-11	General Reference
1F-16(C)-2-70FI-00-11	Block Specific Reference
23-00-XE	Fault Code Specific Reference
JG12-20-03	MIDAS Specific Reference

13. CHANGE RECOMMENDATIONS.

Recommendations concerning changes to this manual shall be submitted in accordance with TO 00-5-1. The following exception to TO 00-5-1 applies: AFTO Forms 22 will be forwarded to the F-16 Central Technical Order Control Unit (CTOCU) for processing. Address is as follows:

OO-ALC/YPVP (CTOCU)
Lockheed Martin Aeronautics Company - Fort Worth
P.O. Box 371 MZ 1010
Fort Worth, TX 76101-0371.
Change Recommendations may also be submitted by e-mail to:
ASC.YP.CTOCUACCLLO@wpafb.af.mil

14. LIST OF NONSTANDARD ABBREVIATIONS.

The following nonstandard abbreviations are used in this manual:

AAA	Antiaircraft Artillery
ACMI	Air Combat Maneuvering Instrumentation
ADF	Air Defense Fighter
ADG	Auxiliary Drive Gearbox
ADI	Attitude Director Indicator
ADS	Air Data Sensor
AGTS-36	A/A37U-36 Aerial Gunnery Target Set
AI	Airborne Interceptors
AMI	Airspeed/Mach Indicator
AMRIU	Advanced Missile RIU
AMUX	Avionics Multiplex
BL	Buttock Line
BUC	Backup Control
C/R	Converter/Regulators
CADC	Central Air Data Computer
CARA	Combined Altitude Radar Altimeter
CENC	Convergent Exhaust Nozzle Control
CFI	Channel Frequency Indicator
CG	Center of Gravity
CIU	Central Interface Unit
CRT	Cathode-Ray Tube
DCU	Data Collection Unit
DEEC	Digital Electronic Engine Control
EAU	Engine Analyzer Unit
EDU	Engine Diagnostic Unit
EEC	Engine Electronic Control
EMI	Electromagnetic Interference
EMRIU	Enhanced Missile RIU
EMS	Engine Monitoring System
EPU	Emergency Power Unit
FCC	Fire Control Computer
FCNP	Fire Control Navigation Panel
FDMU	Flight Data Memory Unit
FFP	Fuel Flow Proportioner
FI	Fault Isolation
FIM	Fault Isolation Manual
FQMS	Fuel Quantity Measuring Subsystem
FR	Fault Reporting
FRM	Fault Reporting Manual
FS	Fuselage Station
FTIT	Fan Turbine Inlet Temperature
GPS	Global Positioning System
GS	General System
GSU	Ground Station Unit
GV	General Vehicle
HQ	HAVE QUICK
HSI	Horizontal Situation Indicator
HUD	Head-Up Display
ILS	Instrument Landing System
INS	Inertial Navigation System
INU	Inertial Navigation Unit
IPB	Illustrated Parts Breakdown
ISA	Inertial Sensor Assembly
JG	Job Guide
KEAS	Knots Equivalent Airspeed
MEWS	Mobile Electronic Weighing System
MIDAS	Maintenance Integrated Data Access System
MRL	Missile Rail Launcher
MUX BUS	Multiplex Bus
NGL	Nose Gear Loading
NRIU	Nuclear Remote Interface Unit
PDU	Pilot's Display Unit
PMG	Permanent Magnet Generator
PPD	Pulse Position Data
PTO	Power Takeoff
REO	Radar/Electro-Optical
RIU	Remote Interface Unit
SAI	Standby Attitude Indicator
SAM	Surface-to-Air Missile
SCP	Stores Control Panel
SDRR	Signal Data Recorder Reproducer
SEC	Secondary Engine Control
SMS	Stores Management Set
STO	Stannous Octoate
TACAN	Tactical Air Navigation
TCTO	Time Compliance Technical Order
TER	Triple Ejector Racks
TV	Television
VVI	Vertical Velocity Indicator
WD	Wiring Data
WL	Waterline

15. LIST OF RELATED PUBLICATIONS.

List of Related Publications.

TO Number	Title
TO 00-25-113-F-16	Critical Alloys and Precious Metals Parts List
TO 00-25-172	Ground Servicing of Aircraft and Static Grounding/Bonding
TO 00-80G-6	Make Safe Procedures for Public Static Display
TO 1-1A-8	ACFT and MSL RPR, Structural Hardware
TO 11A-1-33	Handling and Maintenance of Explosives Loaded Aircraft
TO 1-1B-50	USAF Weight and Balance

List of Related Publications - Continued.

TO Number	Title
TO 1-1-691	Aircraft Weapons Systems, Cleaning and Corrosion Control
TO 1-1-8	Application and Removal of Organic Coatings, Aerospace and Non-Aerospace EQPT
TO 15X-1-1	Maintenance Instructions, Oxygen Equipment
TO 1F-16( )-01	List of Applicable Publications (LOAPS)
TO 1F-16( )-06	Work Unit Code Manual
TO 1F-16( )-1	Flight Manual
TO 1F-16( )-1-1	Supplemental - Flight Manual
TO 1F-16( )-1CL-1	Flight Crew Checklist
TO 1F-16( )-16-1	Nuclear Weapon Loading Basic Information
TO 1F-16( )-16-2	Nuclear Weapon Loading - Procedures
TO 1F-16( )-16-2CL-1	Checklist, Nuclear Weapon Loading Procedures (B57)
TO 1F-16( )-16-2CL-2	Checklist, Nuclear Weapon Loading Procedures (B61)
TO 1F-16( )-16-2CL-3	Checklist, Nuclear Weapon Loading Procedures (BDU-38/B)
TO 1F-16( )-16-2CL-4	Checklist, Nuclear Weapon Loading Procedures (BDU-8/B)
TO 1F-16( )-16-2CL-5	Checklist, Nuclear Weapon Loading Procedures (BDU-12/B)
TO 1F-16( )-16-2CL-6	Checklist, Nuclear Weapon Loading Procedures (BDU-38/B)
TO 1F-16( )-16-2CL-7	Checklist, Nuclear Weapon Loading Procedures (B43/Internal Gun/AIM-9/Chaff/Flare)
TO 1F-16( )-16-2CL-8	Checklist, Nuclear Weapon Loading Procedures (B57/Internal Gun/AIM-9/Chaff/Flare)
TO 1F-16( )-16-2CL-9	Checklist, Nuclear Weapon Loading Procedures (B61/Internal Gun/AIM-9/Chaff/Flare)
TO 1F-16( )-2-00FR-00-1	Fault Reporting
TO 1F-16( )-2-00GV-00-1	General Vehicle Description
TO 1F-16( )-2-00GV-00-2	General Vehicle Description
TO 1F-16( )-2-00GV-00-3	General Vehicle Description (Critical Modification Maintenance Data)
TO 1F-16( )-2-00JG-00-1	Job Guide Index
TO 1F-16( )-2-00WD-00-	Wiring Data Manual 3-1 Thru -5 Wire and Connection List
TO 1F-16( )-2-00WD-00-1	Wiring Data Manual Introduction
TO 1F-16( )-2-00WD-00-2	Wiring Data Manual Equipment List
TO 1F-16( )-2-00WD-00-4	Wiring Data Manual Wiring Diagrams
TO 1F-16( )-2-00WD-00-5	Wiring Data Manual Wiring Diagrams
TO 1F-16( )-2-1-2	Cross-Servicing Guide
TO 1F-16( )-2-07JG-00-1	Lifting and Shoring
TO 1F-16( )-2-09JG-00-1	Towing and Taxiing
TO 1F-16( )-2-10JG-00-1	Aircraft Safety
TO 1F-16( )-2-12JG-00-2	Servicing
TO 1F-16( )-2-21FI-00-1	Air-Conditioning System

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-2-21GS-00-1	Air-Conditioning System
TO 1F-16( )-2-21JG-00-1	Air-Conditioning System
TO 1F-16( )-2-21JG-10-1	Air-Conditioning System Compression
TO 1F-16( )-2-21JG-20-1	Air-Conditioning System Distribution
TO 1F-16( )-2-21JG-30-1	Air-Conditioning System Pressurization
TO 1F-16( )-2-21JG-50-1	Air-Conditioning System Cooling
TO 1F-16( )-2-21JG-60-1	Air-Conditioning System Temperature Control
TO 1F-16( )-2-23FI-00-1	Communications System
TO 1F-16( )-2-23GS-00-1	Communications System
TO 1F-16( )-2-23JG-10-1	HF Radio Communications System
TO 1F-16( )-2-23JG-20-1	Communications Systems
TO 1F-16( )-2-23JG-30-1	Communications System
TO 1F-16( )-2-23JG-40-1	Interphone System
TO 1F-16( )-2-24FI-00-1	Electrical Power System
TO 1F-16( )-2-24GS-00-1	Electrical Power System
TO 1F-16( )-2-24JG-00-1	Electrical Power System
TO 1F-16( )-2-24JG-20-1	Electrical Power System AC Power Generation
TO 1F-16( )-2-24JG-30-1	Electrical Power System DC Power Generation
TO 1F-16( )-2-24JG-40-1	Electrical Power System External Power
TO 1F-16( )-2-24JG-50-1	Electrical Power System Distribution
TO 1F-16( )-2-26FI-00-1	Fire Protection System
TO 1F-16( )-2-26GS-10-1	Fire Protection System
TO 1F-16( )-2-26JG-10-1	Fire and Overheat Detection System
TO 1F-16( )-2-26JG-30-1	Fuel Inerting System
TO 1F-16( )-2-27FI-00-1	Flight Controls
TO 1F-16( )-2-27GS-00-1	Flight Controls
TO 1F-16( )-2-27JG-00-1	Flight Control System
TO 1F-16( )-2-27JG-00-2	Flight Control System
TO 1F-16( )-2-27JG-10-1	Flaperons
TO 1F-16( )-2-27JG-20-1	Rudder
TO 1F-16( )-2-27JG-40-1	Horizontal Stabilizer
TO 1F-16( )-2-27JG-60-1	Speedbrakes
TO 1F-16( )-2-27JG-80-1	Leading Edge Flaps
TO 1F-16( )-2-28FI-00-1	Fuel Systems
TO 1F-16( )-2-28GS-00-1	Fuel Systems
TO 1F-16( )-2-28JG-20-1	Fuel Distribution System
TO 1F-16( )-2-28JG-20-2	Fuel Distribution System
TO 1F-16( )-2-28JG-20-3	Fuel Distribution System
TO 1F-16( )-2-28JG-40-1	Fuel Indicating Systems
TO 1F-16( )-2-29FI-00-1	Hydraulic System
TO 1F-16( )-2-29GS-00-1	Hydraulic System

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-2-29JG-00-1	Hydraulic System
TO 1F-16( )-2-29JG-10-1	Main Hydraulic System
TO 1F-16( )-2-29JG-10-2	Main Hydraulic System
TO 1F-16( )-2-29JG-10-3	Main Hydraulic System
TO 1F-16( )-2-29JG-30-1	Hydraulic Indicating System
TO 1F-16( )-2-30FI-00-1	Ice and Rain Protection System
TO 1F-16( )-2-30GS-00-1	Ice and Rain Protection System
TO 1F-16( )-2-30JG-00-1	Ice and Rain Protection System
TO 1F-16( )-2-31FI-00-1	Flight Loads Recorder and Mechanical Strain Recorder Systems
TO 1F-16( )-2-31FI-00-21	Standard Flight Data Recorder System
TO 1F-16( )-2-31GS-00-21	Standard Flight Data Recorder System
TO 1F-16( )-2-31JG-00-1	Flight Loads Recorder and Mechanical Strain Recorder Systems
TO 1F-16( )-2-31JG-00-21	Standard Flight Data Recorder System
TO 1F-16( )-2-32FI-00-1	Landing Gear
TO 1F-16( )-2-32GS-00-1	Landing Gear
TO 1F-16( )-2-32JG-00-1	Landing Gear
TO 1F-16( )-2-32JG-10-1	Main Landing Gear and Doors
TO 1F-16( )-2-32JG-20-1	Nose Landing Gear and Door
TO 1F-16( )-2-32JG-30-1	Landing Gear Extension and Retraction
TO 1F-16( )-2-32JG-30-2	Landing Gear Extension and Retraction
TO 1F-16( )-2-32JG-40-1	Landing Gear Wheels and Brakes
TO 1F-16( )-2-32JG-50-1	Nose Wheel Steering System
TO 1F-16( )-2-32JG-60-1	Landing Gear Position and Warning System
TO 1F-16( )-2-32JG-80-1	Drag Chute
TO 1F-16( )-2-32JG-90-1	Arresting Hook
TO 1F-16( )-2-33FI-00-1	Lighting System
TO 1F-16( )-2-33GS-00-1	Lighting System
TO 1F-16( )-2-33JG-00-1	Lighting System
TO 1F-16( )-2-33JG-10-1	Lighting System Internal
TO 1F-16( )-2-33JG-40-1	Lighting System External
TO 1F-16( )-2-34FI-00-1	Navigation System
TO 1F-16( )-2-34GS-00-1	Navigation System
TO 1F-16( )-2-34JG-00-1	Navigation System
TO 1F-16( )-2-34JG-10-1	Flight Environmental Systems
TO 1F-16( )-2-34JG-10-2	Flight Environment Systems
TO 1F-16( )-2-34JG-20-1	Altitude and Direction Systems
TO 1F-16( )-2-34JG-30-1	Instrument Landing Aids
TO 1F-16( )-2-34JG-50-1	Navigation System TACAN and A-G/IFF
TO 1F-16( )-2-35FI-00-1	Oxygen System
TO 1F-16( )-2-35GS-00-1	Oxygen System

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-2-35JG-00-1	Oxygen System
TO 1F-16( )-2-36FI-00-1	Pneumatic Supply System
TO 1F-16( )-2-36GS-00-1	Pneumatic Supply System
TO 1F-16( )-2-36JG-10-1	Pneumatic Supply System
TO 1F-16( )-2-49FI-00-1	Emergency Power System
TO 1F-16( )-2-49GS-00-1	Emergency Power System
TO 1F-16( )-2-49JG-00-1	Emergency Power System
TO 1F-16( )-2-49JG-00-2	Emergency Power System
TO 1F-16( )-2-49JG-00-3	Emergency Power System
TO 1F-16( )-2-52JG-00-1	Aircraft Access Doors and Structure
TO 1F-16( )-2-53JG-00-1	Fuselage Access Panels and Structure
TO 1F-16( )-2-70FI-00-1	Power Plant
TO 1F-16( )-2-70FI-00-21	Power Plant
TO 1F-16( )-2-70FI-00-4	Power Plant with Automated Ground Engine Test System
TO 1F-16( )-2-70GS-00-1	Power Plant
TO 1F-16( )-2-70GS-00-21	Power Plant
TO 1F-16( )-2-70JG-00-1	Engine Operation Low Power (Unrestrained)
TO 1F-16( )-2-70JG-00-2	Engine Operation High Power (Restrained)
TO 1F-16( )-2-70JG-00-21	Engine Operation
TO 1F-16( )-2-70JG-00-4	Engine Operation Trim (Restrained and Unsuppressed)
TO 1F-16( )-2-70JG-00-9	Engine Preparation/Restoration for Operation with Automated Ground Engine Test System
TO 1F-16( )-2-70JG-10-1	Engine Removal and Installation
TO 1F-16( )-2-70JG-10-21	Engine Removal and Installation
TO 1F-16( )-2-71JG-00-1	Engine Electrical Harnesses and Drains
TO 1F-16( )-2-71JG-00-21	Engine Electrical Harnesses and Drains
TO 1F-16( )-2-73JG-00-1	Engine Fuel and Control System
TO 1F-16( )-2-73JG-00-2	Engine Fuel and Control System
TO 1F-16( )-2-73JG-00-21	Engine Fuel Control and Distribution Systems
TO 1F-16( )-2-74JG-00-1	Engine Ignition, Electrical Power Supply and Distribution System
TO 1F-16( )-2-74JG-00-21	Engine Ignition, Electrical Power Supply and Distribution Systems
TO 1F-16( )-2-75JG-00-1	Engine Anti-Icing, Accessory Cooling, Compressor Control, and Air Indicating Systems
TO 1F-16( )-2-75JG-00-21	Engine Anti-Icing, Accessory Cooling, Compressor Control, and Air Indicating Systems
TO 1F-16( )-2-76JG-00-1	Engine Power
TO 1F-16( )-2-76JG-00-2	Engine Power Controls
TO 1F-16( )-2-76JG-00-21	Engine Power Controls
TO 1F-16( )-2-76JG-00-22	Engine Power Controls
TO 1F-16( )-2-77JG-00-1	Engine Indicating Systems

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-2-77JG-00-21	Engine Indicating Systems
TO 1F-16( )-2-78JG-00-1	Exhaust Collector Nozzle
TO 1F-16( )-2-78JG-00-21	Exhaust Collector Nozzle
TO 1F-16( )-2-79JG-00-1	Engine Oil Storage and Distribution System
TO 1F-16( )-2-79JG-00-21	Engine Oil Storage and Distribution Systems, Model F100-PW-220, -220E
TO 1F-16( )-2-80FI-00-1	Engine Starting and Accessory Drive Gearbox Systems
TO 1F-16( )-2-80GS-00-1	Engine Starting and Accessory Drive Gearbox Systems
TO 1F-16( )-2-80JG-00-1	Operational Checkout of Engine Starting System
TO 1F-16( )-2-80JG-10-1	Engine Starting System
TO 1F-16( )-2-83JG-20-1	Accessory Drive Gearbox System
TO 1F-16( )-2-94FI-00-1	Weapons System
TO 1F-16( )-2-94GS-00-1	Weapons System
TO 1F-16( )-2-94JG-00-1	Weapons System
TO 1F-16( )-2-94JG-00-2	Weapons System
TO 1F-16( )-2-94JG-10-1	Weapons Release and Management System
TO 1F-16( )-2-94JG-10-2	Weapons Release and Management System
TO 1F-16( )-2-94JG-10-3	Weapons Release and Management System
TO 1F-16( )-2-94JG-10-4	Weapons Release and Management System
TO 1F-16( )-2-94JG-30-1	Weapons Suspension
TO 1F-16( )-2-94JG-30-2	Weapons Suspension
TO 1F-16( )-2-94JG-30-3	Weapons Suspension
TO 1F-16( )-2-94JG-30-4	Weapons Suspension
TO 1F-16( )-2-94JG-30-5	Weapons Suspension
TO 1F-16( )-2-94JG-30-6	Weapons Suspension
TO 1F-16( )-2-94JG-50-1	M61A1 Gun System
TO 1F-16( )-2-94JG-50-2	M61A1 Gun System
TO 1F-16( )-2-94JG-50-3	M61A1 Gun System (Boresighting)
TO 1F-16( )-2-94JG-60-1	Fire Control Sensing
TO 1F-16( )-2-94JG-60-1-1	Supplemental - Fire Control Sensing System
TO 1F-16( )-2-94JG-60-2	Fire Control Sensing
TO 1F-16( )-2-94JG-70-1	Fire Control Avionics System
TO 1F-16( )-2-94JG-70-2	Fire Control Avionics System
TO 1F-16( )-2-95FI-00-1	Crew Escape and Safety System
TO 1F-16( )-2-95GS-00-1	Crew Escape and Safety System
TO 1F-16( )-2-95JG-00-1	Crew Escape and Safety System
TO 1F-16( )-2-95JG-10-1	Ejection Seat
TO 1F-16( )-2-95JG-10-2	Ejection Seat
TO 1F-16( )-2-95JG-20-1	Canopy Jettison System
TO 1F-16( )-2-95JG-20-2	Canopy Jettison System
TO 1F-16( )-2-95JG-20-3	Canopy Jettison System

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-2-95JG-20-4	Canopy Jettison System
TO 1F-16( )-2-95JG-50-1	Survival Equipment
TO 1F-16( )-2-97FI-00-1	Photographic/Video System
TO 1F-16( )-2-97GS-00-1	Photographic/Video System
TO 1F-16( )-2-97JG-00-1	Photographic/Video System
TO 1F-16( )-2-99FI-00-1	Penetration Aids and ECM
TO 1F-16( )-2-99FI-00-1-1	Supplemental - Penetration Aids and ECM
TO 1F-6( )-2-99FI-00-1-2	Supplemental - Penetration Aids and ECM
TO 1F-16( )-2-99GS-00-1	Penetration Aids and ECM
TO 1F-16( )-2-99GS-00-1-1	Supplemental, Penetration Aids and ECM
TO 1F-16( )-2-99GS-00-1-2	Supplemental, Penetration Aids and ECM
TO 1F-16( )-2-99JG-00-1	Penetration Aids and ECM
TO 1F-16( )-2-99JG-10-1	Radar Threat Warning System
TO 1F-16( )-2-99JG-20-1	Electronic Countermeasures
TO 1F-16( )-2-99JG-30-1	Chaff/Flare Dispenser Set
TO 1F-16( )-3-1	Structural Repair Structures
TO 1F-16( )-3-2	Structural Repair Doors
TO 1F-16( )-3-3	Structural Repair Fuselage
TO 1F-16( )-3-4	Structural Repair Stabilizers
TO 1F-16( )-3-5	Structural Repair Wings
TO 1F-16( )-4-1	Illustrated Parts Breakdown (IPB) Introduction
TO 1F-16( )-4-2	IPB Numerical Index
TO 1F-16( )-4-21	IPB Air-Conditioning System
TO 1F-16( )-4-23	IPB Communications System
TO 1F-16( )-4-24	IPB Electrical Power System
TO 1F-16( )-4-26	IPB Fire Protection System
TO 1F-16( )-4-27	IPB Flight Controls
TO 1F-16( )-4-28	IPB Fuel and Inflight Refueling System
TO 1F-16( )-4-29	IPB Hydraulic System
TO 1F-16( )-4-3	IPB Reference Designation Index
TO 1F-16( )-4-30	IPB Ice and Rain Protection System
TO 1F-16( )-4-31	IPB Flight Loads Recorder
TO 1F-16( )-4-32	IPB Landing Gear
TO 1F-16( )-4-33	IPB Lighting System
TO 1F-16( )-4-34	IPB Navigation System
TO 1F-16( )-4-35	IPB Oxygen System
TO 1F-16( )-4-36	IPB Pneumatic Supply System
TO 1F-16( )-4-4	IPB Special Support Equipment
TO 1F-16( )-4-49	IPB Emergency Power System
TO 1F-16( )-4-51	IPB Aircraft Structure
TO 1F-16( )-4-70	IPB Power Plant

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-4-80	IPB Engine Starting System
TO 1F-16( )-4-94	IPB Weapons System
TO 1F-16( )-4-95	IPB Crew Escape and Safety Equipment
TO 1F-16( )-4-97	IPB Photographic/Video System
TO 1F-16( )-4-99	IPB Penetration Aids and ECM
TO 1F-16( )-5-1	Basic Weight Checklists
TO 1F-16( )-5-2	Loading Data
TO 1F-16( )-6	Scheduled Inspection and Maintenance Requirements
TO 1F-16( )-6CF-1	Acceptance/Functional Check Flight Procedures
TO 1F-16( )-6CL-1	Acceptance/Functional Check Flight Checklist
TO 1F-16( )-6SC-1	Inspection Sequence Charts
TO 1F-16( )-6WC-1	Preflight, End of Runway, Thruflight, Launch and Recovery, Quick Turn-Around and Postflight Inspection Workcards
TO 1F-16( )-6WC-2	Phased Inspection Workcards
TO 1F-16( )-8-1	Operational Flight Program Instructions, Weapons Systems, F-16C/D Aircraft
TO 1F-16( )-21	Aircraft Master Inventory Guide
TO 1F-16( )-23	Corrosion Control
TO 1F-16( )-25-1	Nuclear Weapons - Delivery Manual (Secret Restricted Data)
TO 1F-16( )-25-1-1	Nuclear Weapon Aircrew Delivery Procedures (Ballistic Tables), B57/B61Bombs
TO 1F-16( )-25-1CL-1	Checklist, Nuclear Weapon Aircrew Delivery Procedures, B57/B61 Bombs
TO 1F-16( )-25-4	Nuclear Weapon Aircrew Delivery Procedures, B57/B61, EPAF Series
TO 1F-16( )-25-4-1	Nuclear Weapon Aircrew Delivery Procedures Ballistic Tables, B57/B61,EPAF Series
TO 1F-16( )-25-4CL-1	Checklist, Nuclear Weapon Aircrew Delivery Procedures, B57/B61, EPAF Series
TO 1F-16( )-25-10	Practice Bomb Aircrew Delivery Procedures, BDU-38/B, BDU-30B/B, BDU-33D/B,MK106
TO 1F-16( )-25-10CL-1	Checklist, Practice Bomb Aircrew Delivery Procedures, SUU-20A/A, SUU-20B/A Dispensers
TO 1F-16( )-25-10CL-2	Checklist, Practice Bomb Aircrew Delivery Procedures, BDU-38/B Profile Practice Bombs
TO 1F-16( )-33-1-1	Nonnuclear Munitions Basic Information
TO 1F-16( )-33-1-2	Nonnuclear Munitions Loading Procedures
TO 1F-16( )-33-1-2CL-1	Checklist, Nonnuclear Munitions Loading Procedures, Functional Checks
TO 1F-16( )-33-1-2CL-10	Checklist, Nonnuclear Munitions Loading Procedures, Missile, Guided, AGM-65A, AM-65B, and Training Guided Missile A/37, A-TI (TGM)

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-33-1-2CL-100	Checklist, Delayed Flight or Alert, Immediately Prior to Launch and Safing
TO 1F-16( )-33-1-2CL-101	Checklist, Nonnuclear Munitions, Loading Procedures, Integrated Gun System, AIM-9, Missiles, and Chaff/Flare Dispenser
TO 1F-16( )-33-1-2CL-11	Checklist, Nonnuclear Munitions Loading Procedures, Bomb Cluster MK1, No. 1 mk2 (bl-752)
TO 1F-16( )-33-1-2CL-1-1	Checklist, Nonnuclear Munitions Loading Procedures, Functional Checks (Blocks 15B and On)
TO 1F-16( )-33-1-2CL-12	Checklist, Nonnuclear Munitions Loading Procedures, dispenser, flare, SUU-25C/A, and SUU-25E/A
TO 1F-16( )-33-1-2CL-13	Checklist, Nonnuclear Munitions Loading Procedures, Dispenser and Bomb, CBU-25B/B, CBU-58/B, CBU-521/B, and CBU-71A/B
TO 1F-16( )-33-1-2CL-14	Checklist, Nonnuclear Munitions Loading Procedures, Dispenser and Bomb, CBU-25B/B, CBU-58/B, CBU-521/B, and CBU-71A/B
TO 1F-16( )-33-1-2CL-15	Checklist, Nonnuclear Munitions Loading Procedures, Bomb Cluster, MK20 MODS 3 and 4
TO 1F-16( )-33-1-2CL-16	Checklist, Nonnuclear Munitions Loading Procedures, Dispenser, Bomb and Rocket, SSU-20A/A and SSU-20B/A
TO 1F-16( )-33-1-2CL-17	Checklist, Nonnuclear Munitions Loading Procedures, Practice Bomb BDU-33B/B, and BDU-33D/B
TO 1F-16( )-33-1-2CL-18	Checklist, Nonnuclear Munitions, Loading Procedures, Flares and Chaff, Dispenser Set, AN/ALE-40(MOD)
TO 1F-16( )-33-1-2CL-19	Checklist, Nonnuclear Munitions Loading Procedures, Bomb, Chemical Warfare, 350 Pound, BLU-52/B and BLU-52A/B
TO 1F-16( )-33-1-2CL-2	Checklist, Nonnuclear Munitions Loading Procedures, Gun System
TO 1F-16( )-33-1-2CL-23	Checklist, Nonnuclear Munitions Loading Procedures, Missile, Guided, AIM-120A
TO 1F-16( )-33-1-2CL-26	Checklist, Nonnuclear Munitions Loading Procedures, Missile, Air-to-Surface, Penguin MK3 MOD Ø
TO 1F-16( )-33-1-2CL-27	Checklist, Nonnuclear Munitions, Loading Procedures, Missiles, AIM-7F and AIM-7M
TO 1F-16( )-33-1-2CL-3	Checklist, Nonnuclear Munitions Loading Procedures, AIM-9J/J1/J2/J3, AIM-9N, N-1, N-2, N-3, AIM-9P, P-1, P-2, P-3, and AIM-9L
TO 1F-16( )-33-1-2CL-4	Checklist, Nonnuclear Munitions Loading Procedures, Bombs, General Purpose, 500-Pound MK82, 2000-Pound MK84, Bomb Leaflet, 750-Pound M129E2
TO 1F-16( )-33-1-2CL-5	Checklist, Nonnuclear Munitions Loading Procedures, Bomb, General Purpose, 500-Pound MK82 (Snakeye 1)
TO 1F-16( )-33-1-2CL-6	Checklist, Nonnuclear Munitions Loading Procedures, MK36 Destructor

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-33-1-2CL-7	Checklist, Nonnuclear Munitions Loading Procedures, Bomb, Fire 750-Pound, BLU-27B/B
TO 1F-16( )-33-1-2CL-8	Checklist, Nonnuclear Munitions Loading Procedures, bomb, Guided, LASER, GBU-10/B, GBU-10A/B, GBU-10C/B, and GBU-12B/B
TO 1F-16( )-33-1-2CL-9	Checklist, Nonnuclear Munitions Loading Procedures, Bomb, Guided, Electro-Optical GBU-8/B
TO 1F-16( )-33-1-4	Integrated Combat Turn-Around Procedures
TO 1F-16( )-33-1-4CL-1	Checklist, Integrated Combat, Turn-Around Procedures, Missile AIM-9Series, Internal Gun and Flares and Chaff Dispenser Set, AN/ALE-40 (MOD)
TO 1F-16( )-33-1-4CL-2	Checklist, Integrated Combat Turn-Around Procedures, Multiple Loading, Bombs General Purpose MK82, MK82 (Snakeye 1), Cluster Bomb MK20, MOD 3 and4, Dispenser and Bomb, CBU-52B/B, CBU-589/B, CBU-58A/B, CBU-71/B, CBU-71A/B, BL-755, Internal Gun, Missile AIM-9 Series, and Flares and Chaff Dispenser Set, AN/ALE-40 (MOD)
TO 1F-16( )-33-1-4CL-3	Checklist, Integrated Combat Turn-Around Procedures, Missile, Guided AGM- 65A and AGM-65B, Internal Gun, Missile AIM-9 Series, and Flares and Chaff Dispenser Set, AN/ALE-40 (MOD)
TO 1F-16( )-33-1-4CL-4	Checklist, Integrated Combat Turn-Around Procedures, Preload, Bomb, General Purpose MK82, Dispenser and Bomb, CBU-52B/B, CBU-58/B, CBU-58A/B, CBU-71/B, CBU-71A/B, Bomb Cluster MK20, MOD 3 and 4, Internal Gun, Missile AIM-9 Series, Flares and Chaff Dispenser Set, AN/ALE-40 (MOD), Missile, Guided, AGM-65A and AGM-65B
TO 1F-16( )-33-1-4CL-5	Checklist, Integrated Combat Turn-Around Procedures, Bomb, General Purpose MK84, Bomb, Guided, LASER, GBU-10/B, GBU- 10A/B and GBU-10C/B, Internal Gun, Missiles AIM-9 Series, and Flares and Chaff Dispenser Set, AN/ALE-40(MOD)
TO 1F-16( )-33-1-4CL-6	Checklist, Integrated Combat Turn-Around Procedures, Dispenser, Bomb and Rocket SUU-20A/A and SUU-20B/A, Practice Bomb, BDU-33B/B, BDU-33D/B, Internal Gun, and Missile AIM-9 Series
TO 1F-16( )-34-1-1	Nonnuclear Munitions Delivery
TO 1F-16( )-34-1-1-1	Supplement, Nonnuclear Munitions Delivery Manual
TO 1F-16( )-34-1-1-2	Supplementary Manual - Nonnuclear Munitions Delivery
TO 1F-16( )-34-1-1-2CL-1	Supplementary Checklist, Nonnuclear Munitions Delivery, Flight Crew Procedures
TO 1F-16( )-34-1-1CL-1	Checklist, Nonnuclear Munitions Delivery, Flightcrew Procedures
TO 1F-16( )-34-1-2	Nonnuclear Munitions Delivery Ballistics
TO 1F-16( )-36	Nondestructive Inspection Manual (NDI)
TO 1F-16( )-37	USAF Calibration Measurement Summary

List of Related Publications - Continued.

TO Number	Title
TO 1F-16( )-38	Aircraft Structural Integrity - Force Management Data Collection Procedures
TO 1F-16B-2-00WD-00-1	Wiring Data Manual Introduction
TO 1F-16B-2-00WD-00-2-1thru-5	Wiring Data Manual Equipment List
TO 1F-16B-2-00WD-00-3-1thru-5	Wiring Data Manual Wire and Connection List
TO 1F-16B-2-00WD-00-4	Wiring Data Manual Wiring Diagrams
TO 1F-16B-2-00WD-00-5	Wiring Data Manual Wiring Diagrams
TO 42E1-1-1	Aerospace Hose ASSY

16. TCTO HISTORICAL RECORD.

The following chart identifies the TCTO's that are incorporated into the organizational maintenance manual set. The table is self-explanatory and is arranged in TCTO number sequence.

List of Time Compliance Technical Orders.

TCTO Number	TCTO Title	TCTO Date
1F-16-1148	Incorporate ALR 69 with EEROM in F-16 Aircraft	15 Mar 85
1F-16-1312	Modification of Equipment Installation, PN 16F0001-1, F-16A/B/C/D Aircraft	30 Jun 88
DE1F-16-1313	Modification of F-16 Aircraft to Incorporate CCP 4283	30 Apr 85
NE1F-16-1313	Modification of F-16A/B Aircraft to Incorporate CCP 4286R1	30 Nov 87
1F-16-1337	Replacement of Polyvinyl Chloride Fairing, PN 16F0170-1, 16F0170-5, 16F0180-1, 16F0180-3, 16F2170-5, 16F2180-1, 16F2185-5, 16F3173-1, F-16A/B/C/D Aircraft	31 Dec 87
1F-16-1340	Installation of Voice Message Unit, F-16A/B/C/D Aircraft	31 Jul 87
1F-16-1356	Replacement of Electronic Component Assembly, PN 16C-0851-839, F-16A/B Aircraft	31 Oct 86
1F-16-1373	Modification of Constant-Speed Drive (CSD), PN 727429C and PN 737060, F-16A/B Aircraft	30 Apr 86
1F-16-1411	Installation of Low Altitude Warning Matrix, PN 16F-1625-811 or 16F-1625-819, F-16A/B Aircraft	31 Dec 86
1F-16-1415	Modification of Hydraulic Pressure Transmitter, PN 28-1704, F-16A/B/C/D Aircraft	May 87
1F-16-1482	Modification of Chaff/Flare Dispenser Switch to Incorporate Hands-On Capability, F-16A/B/C/D Aircraft	3 Nov 91
1F-161579	Rework of Wing Assembly, PN 16W013-( ) and 16W014-( ), F-16A/B/C/D Aircraft	30 Nov 88
1F-16-1627	Replacement of Wing Leading Edge Flap Actuators, PN 2022056-1-1, 2022058-1-1, 2022058-1-2, 2048344-1-4, or 2048342-2-1, for F-16A/B/C/D Aircraft	30 Apr 90
1F-16-1690	Installation of Expanded Central Interface Unit (XCIU) and Expanded Fire Control Computer (XFCC) Operational Flight Program (OFP)	9 Aug 89

List of Time Compliance Technical Orders - Continued.

TCTO Number	TCTO Title	TCTO Date
1F-16-1696	Modification of Wing Assembly, PN 16W013-( ), 16W014-( ), 16W015-( ), F-16A/B/C/D Aircraft	28 Feb 91
1F-16-1735	Installation of Group B Provisions for F100PW220/220E Engine with Nonintegrated Diagnostics, F-16A/B Aircraft	31 Oct 92
1F-16-1790	Replacement of Have Quick II Radio ARC-164(V) in F-16A/B/C/D Aircraft	30 Nov 92
1F-16-1791	Installation of Ring LASER Gyro (RLG) Inertial Navigation Unit (INU), P/N 34078600311 or 890500201, in F-16 A/B Aircraft	28 Feb 92
1F-16-1825	Installation of Group B Provisions for F100PW220/220E Engine with Integrated Diagnostics, F-16A/B Aircraft	31 Aug 95
1F-16-1832	Modification of Center Fuselage Structure to Improve Service Life and Eliminate Possible Cracks, F-16A/B/C/D Aircraft	30 May 93
1F-16-1909	Installation of Wheel Well Switch Assembly, PN 241270-001 or 241270-002, Sequencer Switch, PN AZ228100-002, Electromagnetic Interference (EMI) Filter, PN AZ228500-001, Chaff Magazine, PN 135912-0001-1, Flare Magazine, PN 133686-0001-1, Wiring Harness, PN 241266-002, and Bracket, PN 241277-001 and PN 241278-001, for F-16A/B/C/D Aircraft	31 Mar 94
1F-16-1943	Inspection of Pneumatic Tube, PN 16H2002-( ), F-16A/B/C/D Aircraft	17 Aug 93
1F-16-1947	Modification of Fuselage Station 341 Upper Bulkhead, PN 16B5251-( ) or 16B5257-801/-805/-813, F-16A/B/C/D Aircraft	28 Feb 94
1F-16-1957	Replacement of AN/ALE40 Sequencer Switch, PN 1340160001, 1404870001 and 1576800001 with AN/ALE47 Digital Sequencer Switch, PN 1792500002 for F-16A/B/C/D Aircraft	30 Nov 93
1F-16-1994	Modification of Wire Harness, PN H16DW410-( ) and H16DW420-( ), for F-16A/B Aircraft	TBD
1F-16-1995	Installation of Revised Software Program for Ring LASER Gyro, 34078600-312 or 890500-202, F-16A/B Aircraft	TBD
1F-16-2020	Inspection of FS 479.55 Bulkhead, Part Number 16B6223-( ), F-16A/B/C/D Aircraft	31 Dec 94
1F-16-2034	Modification of Fuselage Station 462.82 Bulkhead, Part Number 16B6215( ) and Replacement of the 479.55 Bulkhead, Part Number 16B6223( ) on F-16A/B/C/D Aircraft	1 Aug 96
1F-16-2038	Inspection of Nose Landing Gear and Main Landing Gear Downlock Actuator, PN 2006811-( ), F-16A/B/C/D Aircraft	29 Feb 96
1F-16-2041	Inspection of Leading Edge Flap Drive Torque Shaft, PN 2022064- ( )-1, 2022976-( )-1, and 2022978-1-1, F-16A/B/C/D Aircraft	19 Jul 95
1F-16-2049	Inspection of Main Landing Gear and Nose Landing Gear Components, PN 2006000-( ), 2006100-( ), 2006500-( ), and 2006600-( ), F-16A/B/C/D Aircraft	31 Dec 97
1F-16-2051	Inspection/Replacement of Main Landing Gear Tension Strut Assembly, PN 2006000-( ), F-16A/B/C/D Aircraft	31 Dec 97
1F-16-2055	Inspection of Side Stick Controller Force Transducer for PN 461360-( )-( ), F-16A/B/C/D Aircraft	27 Oct 95
1F-16-2059	Replacement of Forward Engine Mount Backup Support, Part Number 16B68417 and 16B684111, on F-16A/B/C/D Aircraft	30 Jan 98

List of Time Compliance Technical Orders - Continued.

TCTO Number	TCTO Title	TCTO Date
1F-16-2060	Modification of Upper Center Fuselage Skins, Part Number 16B5301-( ), 16B5303-( ), and 16B5304-( ), on F-16A/B/C/D Aircraft	30 Jan 98
1F-16-2062	Inspection of Horizontal Stabilizer Assembly, PN 16T7461-( ), for Proper Configuration, F-16A/B/C/D Aircraft	12 Oct 95
1F-16-2080	Modification of Wing Assemblies, PN 16W013-( ), 16W015-( ), and 16W1014-( ), F-16A/B/C/D Aircraft	30 Nov 98
1F-16-2131	Modification of F.S. 357.82 Upper Bulkhead P/N 16B5261( ) on F-16 A/B/C/D Aircraft	15 Mar 00
1F-16-2182	Inspection of Manual Trim Panel Assembly, Part Number 16C0650-801/-803, for Conductive Moisture Seal on Trim Motor Assembly and Application of Conformal Coating on Soldered Electrical Terminations, F-16A/B/C/D Aircraft	12 Feb 99
1F-16-2244	Installation of Improved MLG Wheel Assembly, PN 3-1506, and Brake Assembly, PN 2-1543, F-16A/B/C/D (Blocks 10 Thru 32) Aircraft	30 Sep 00
1F-16-2265	Modification of Fuselage Station 110 Bulkhead Assembly, PN 16B1230-( ), F-16A/B Aircraft	31 Jul 02
1F-16-2267	Replacement of Fuselage Station 357 Upper Bulkhead Enhancements, F-16A/B Aircraft	31 Aug 02
1F-16-2268	Replacement of Fuselage Station 446 Lower Frame PN 16B6212-( ), F-16A/B Aircraft	31 Dec 01
1F-16-2310	Replacement of Outboard Horizontal Tail Support Beam, PN 16B6825-21/-22/-25/-26, F-16C/D Aircraft	3 May 02
1F-16-2312	Modification of Outboard Vertical Skin, PN16B6307-( ), F-16A/B Aircraft	31 Dec 03
1F-16-2313	Modification of Fuselage Station 150.00 Bulkhead, PN 16B1240-( ) and 16B2240-( ), F-16A/B Aircraft	TBD
1F-16-2318	Modification of Wing Assembly, PN 16W013M1-( ) and PN 16W015-( ), F-16A/B Aircraft	TBD
XX1F-16-2387	Implementation of 600 Hour Time Change Requirements for Replacement of A and B Hydraulic System Filter Elements on F-16A/B/C/D Aircraft	2 Jun 03
1F-16-2422	Replacement of Common Engine Disconnect Wiring Harness, PN H16DW2713-209/-504/-507 or H16DW2714-02/-04/-500 with Redesigned Harness, PN H16DW2713-509/-510 or H16DW2714-501/-502, F-16A/B/C/D Aircraft	TBD
BE1F-16-6005	Installation of Group B Provisions for Carapace Electronic Countermeasures System, F-16A/B Aircraft	31 Jul 94
BE1F-16-6006	Installation of Group A Provisions for Carapace Electronic Countermeasures System, F-16A/B Aircraft	31 Jul 94
BE1F-16-6007	Installation of Increased Area Horizontal Tail, Block 10, F-16A/B Aircraft	31 Jan 94

SAFETY SUMMARY

1. SAFETY SUMMARY.

WARNING

The use of potentially hazardous material is called out in this Technical Order. If the described use of such material could create an immediate and serious hazard, a WARNING is provided at the appropriate place in the text. For all hazardous material, read and follow all label directions on the container. If you require more information regarding the potential hazards or precautions, review the Material Safety Data Sheets (MSDS), if available, or any equivalent source of safety information. Contact your supervisor or local Safety and Health Offices if you still require additional information. Personnel shall comply with all SAFETY directives. EXPLOSIONS, DAMAGE TO EYES, LUNGS, SKIN, NOSE and THROAT, or DEATH may result if personnel fail to comply with safety precautions.

Warnings and cautions precede the text and follow the paragraph headings to which they apply. Notes may precede or follow applicable text depending upon the material to be highlighted. When a warning, caution, or note consists of two or more paragraphs, the heading WARNING, CAUTION, or NOTE is not repeated above each paragraph. Warnings, cautions, and notes are short and concise statements used to emphasize important or critical data. Warnings and cautions state the hazard and result or reason unless obvious. Following are the definitions and examples of a warning, caution, and note:

WARNING: An operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in injury to or death of personnel.

WARNING

Electrical power shall not be connected or applied to the aircraft. Failure to comply may cause injury to personnel and damage to the aircraft.

CAUTION: An operating or maintenance procedure, practice, condition, statement, etc., which, if not strictly observed, could result in damage to or destruction of equipment or loss of mission effectiveness.

CAUTION

Use clean, soft cloth, turning frequently for a faster, better finish. Discard when used or contaminated with any abrasive material to prevent canopy damage.

NOTE: An essential operating or maintenance procedure, condition, or statement which must be highlighted.

NOTE

Polish one canopy section at a time to prevent streaking by dried polish.

CHAPTER 00

GENERAL VEHICLE DESCRIPTION

00.1 GENERAL DESCRIPTION.

The F-16A is a single-engine, single-seat, multirole tactical fighter with full air-to-air and air-to-ground combat capabilities. The F-16B is a tandem seat, multirole tactical fighter/trainer with the same combat capabilities as the F-16A. It has a wingspan of 31 feet (32 feet 10 inches overall span with missiles) and an overall length of 49-1/2 feet. With 100 percent internal fuel, full ammunition, and two wingtip missiles, the gross weight of the aircraft is approximately 23,500 pounds with JP-4 fuel and approximately 23,850 pounds with JP-5/8 fuel. The maximum gross landing weight is 35,400 pounds, and the maximum gross takeoff weight is 35,400 pounds which permits the carriage of external loads of 11,000 pounds with full ammunition and full internal fuel. The F-16 aircraft is powered by the 94 F100-PW-200 or 95 F100-PW-220 turbofan engine, which is in the 25,000-pound thrust class. The fuselage is characterized by a large bubble canopy, forebody strakes, and an underslung engine air inlet. The wing and tail surfaces are thin and feature moderate aft sweep. The wing has leading edge flaps which are deflected manually or automatically to enhance performance over a wide speed range. Flaperons are mounted on the trailing edge of the wing and combine the functions of flaps and ailerons. The horizontal stabilizers have a small amount of negative dihedral and provide pitch and roll control through differential deflection. The vertical tail (augmented by twin ventral fins) provides directional stability. All flight control surfaces are actuated hydraulically and receive signals through a fly-by-wire system. The general arrangement of the F-16A/B aircraft is shown in Figure 00-1.

00.2 STRUCTURE.

On the F-16 aircraft, the construction methods combined with the materials used provide a highly efficient, lightweight, rugged airframe structure. The modular design approach, in which the forward fuselage, the inlet, the center fuselage, the aft fuselage, the empennage, and the wings are designed as modules, permits ease of maintenance, growth, and technology upgrading. Flaperons, horizontal stabilizers, ventral fins, and 80 percent of the main landing gear parts are interchangeable left and right. The basic fuselage construction is sheet metal skins that are stiffened by formed and built-up sheet metal frames and longerons. Wherever concentrated loads or functional requirements dictate, major bulkheads, spars, and beams are integrally machined components. Each wing skin is a single machined plate. Bonded construction is limited to the wing control surfaces, rudder, horizontal stabilizer, and secondary structure. The principal steel application is in the landing gear components. 159 Titanium is used for the horizontal stabilizer pivot shaft and miscellaneous fittings. 160 Aluminum is used for the horizontal stabilizer pivot shaft and miscellaneous fittings. The canopy transparency is polycarbonate. Graphite-epoxy is used for the vertical and horizontal stabilizers. (See Figure 00-2.)

00.2.1 Reference Planes.

Three planes of reference are used to pinpoint locations on the aircraft. The planes of reference are: Fuselage Station (FS), forward and aft; Buttock Line (BL), left and right; and Waterline (WL), up and down. (See CHAPTER 6.)

00.3 AIRFRAME.

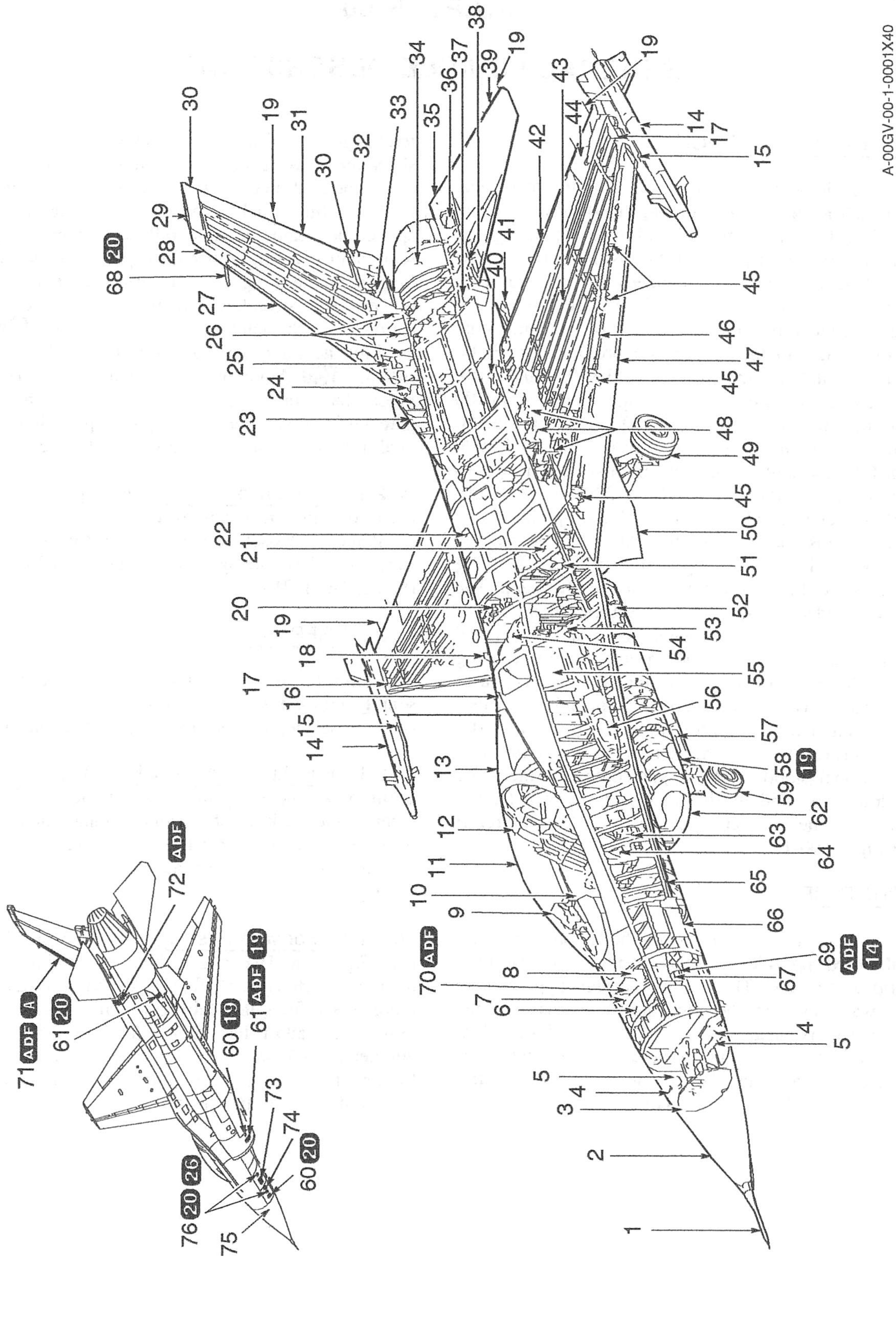
The aircraft airframe (Figure 00-3) is a modular-type assembly consisting of the forward fuselage, engine air inlet, center fuselage, aft fuselage, empennage, and wing modules.

00.3.1 Fuselage Assembly.

The fuselage is a semimonocoque structure of sheet metal skins stiffened by formed and built-up sheet metal frames and longerons. The fuselage structure consists of four major components: the forward fuselage, engine air inlet, center fuselage, and aft fuselage.

00.3.1.1 Forward Fuselage.

The forward fuselage assembly (Figure 00-4) contains the crew station, canopy, equipment compartments, F1 fuel tank, and nose radome. The nose radome is a fiberglass fairing which is hinged to the forward bulkhead. Ballast has been added to the forward side of bulkhead 65.0 and the adjoining equipment bay to meet Center of Gravity (CG) requirements. The amount of weight will be 45, 75, or 105 pounds.


A-00GV-00-1-0001X40

1 PITOT-STATIC PROBE
2 NOSE RADOME
3 FIRE CONTROL RADAR ANTENNA
4 ANGLE-OF-ATTACK PROBE
5 ANGLE OF ATTACK TRANSMITTER
6 FORWARD ELECTRONICS EQUIPMENT BAY
8 CABIN PRESSURE REGULATOR
9 HEAD-UP DISPLAY (HUD)
10 INSTRUMENT PANEL
11 MOVEABLE CANOPY
12 EJECTION SEAT
13 FIXED CANOPY
14 13 AIM-9 MISSILE AIM-9 MISSILE OR ADF AIM-120 MISSILE
15 MISSILE LAUNCHER
16 REFUEL AND UPPER FORMATION LIGHT
17 NAVIGATION LIGHT
18 TACAN UPPER ANTENNA
19 STATIC DISCHARGER
20 LEADING EDGE FLAP DRIVE UNIT
21 HYDRAULIC RESERVOIR
22 INFLIGHT REFUELING RECEPTACLE
23 UHF/IFF UPPER ANTENNA
24 FLIGHT CONTROL HYDRAULIC ACCUMU- LATORS
25 ANTICOLLISION LIGHT POWER SUPPLY
26 VERTICAL STABILIZER ATTACH FINS
27 VERTICAL STABILIZER
28 VHF COMMUNICATIONS ANTENNA
29 ANTICOLLISION LIGHT
30 THREAT WARNING ANTENNAS
31 RUDDER
32 NAVIGATION LIGHT
33 INTEGRATED RUDDER SERVOACTUATOR
34 94 F-100-PW-200 ENGINE 95 F-100-PW-220 ENGINE
35 SPEEDBRAKE
36 SPEEDBRAKE ACTUATOR
37 CHAFF/FLARE DISPENSER
38 HORIZONTAL STABILIZER INTEGRATED SERVOACTUATOR
39 HORIZONTAL STABILIZER
40 FLAPERON INTEGRATED SERVOACTUATOR
41 ARRESTING HOOK
42 FLAPERON
43 WING STRUCTURAL BOX
44 FIXED TRAILING EDGE PANEL
45 LEADING EDGE FLAP ROTARY ACTUATOR
46 LEADING EDGE FLAP TORQUE SHAFT
47 LEADING EDGE FLAP
48 WING ATTACH FITTING
49 MAIN LANDING GEAR
50 MAIN LANDING GEAR DOOR
51 LEADING EDGE FLAP DRIVE ANGLE GEAR BOX
52 AIR-CONDITIONING PACKAGE
53 M61A1 20MM GUN
54 AMMUNITION DRUM
55 EPU NITROGEN BOTTLE
56 GUN PORT
57 NOSE LANDING GEAR DOOR
58 19 TOTAL TEMPERATURE PROBE
59 NOSE LANDING GEAR
60 C/D BAND ANTENNA
61 19 UHF/IFF LOWER ANTENNA 20 UHF/IFF LOWER ANTENNA ADF AIFF LOWER AN- TENNA
62 ENGINE AIR INLET
63 LEFT CONSOLE
64 THROTTLE LEVER
65 ENGINE AIR INLET
66 STRAKE
67 LOWER EQUIPMENT COMPARTMENT
68 THREAT WARNING ANTENNAS
69 14 ADF IDENTIFICATION LIGHT
70 ADF AIFF UPPER ANTENNA
71 ADF A HF ANTENNA
72 ADF TUNNING ANTENNA (LEFT AND RIGHT)
72 VENTRAL FIN
73 MARKER BEACON ANTENNA
74 TACAN LOWER ANTENNA
75 GLIDE-SLOPE/LOCALIZER ANTENNA
76 20 26 RADAR ALTIMETER ANTENNA

Figure 00-1. Aircraft General Arrangement.

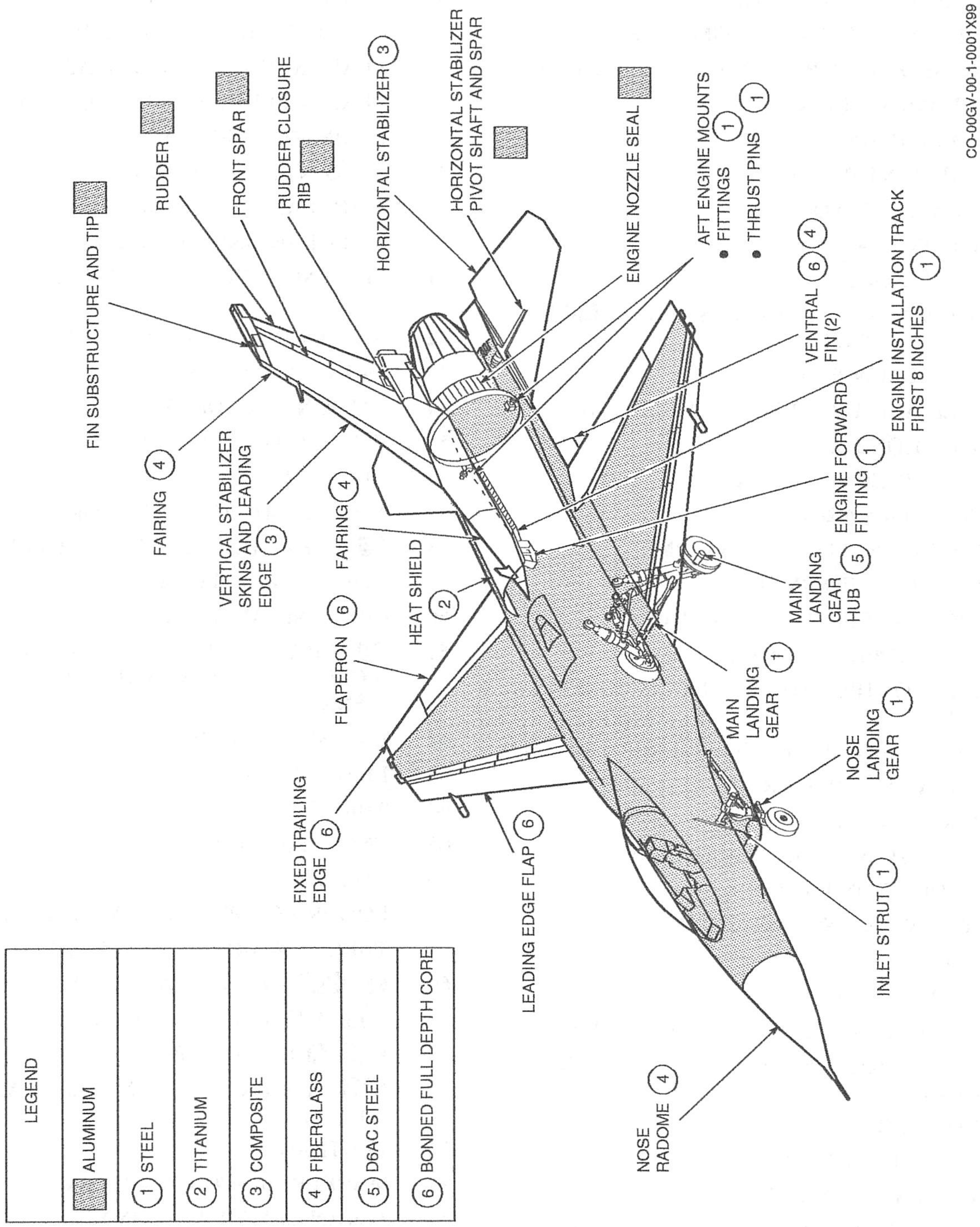


Figure 00-2. Airframe Materials.

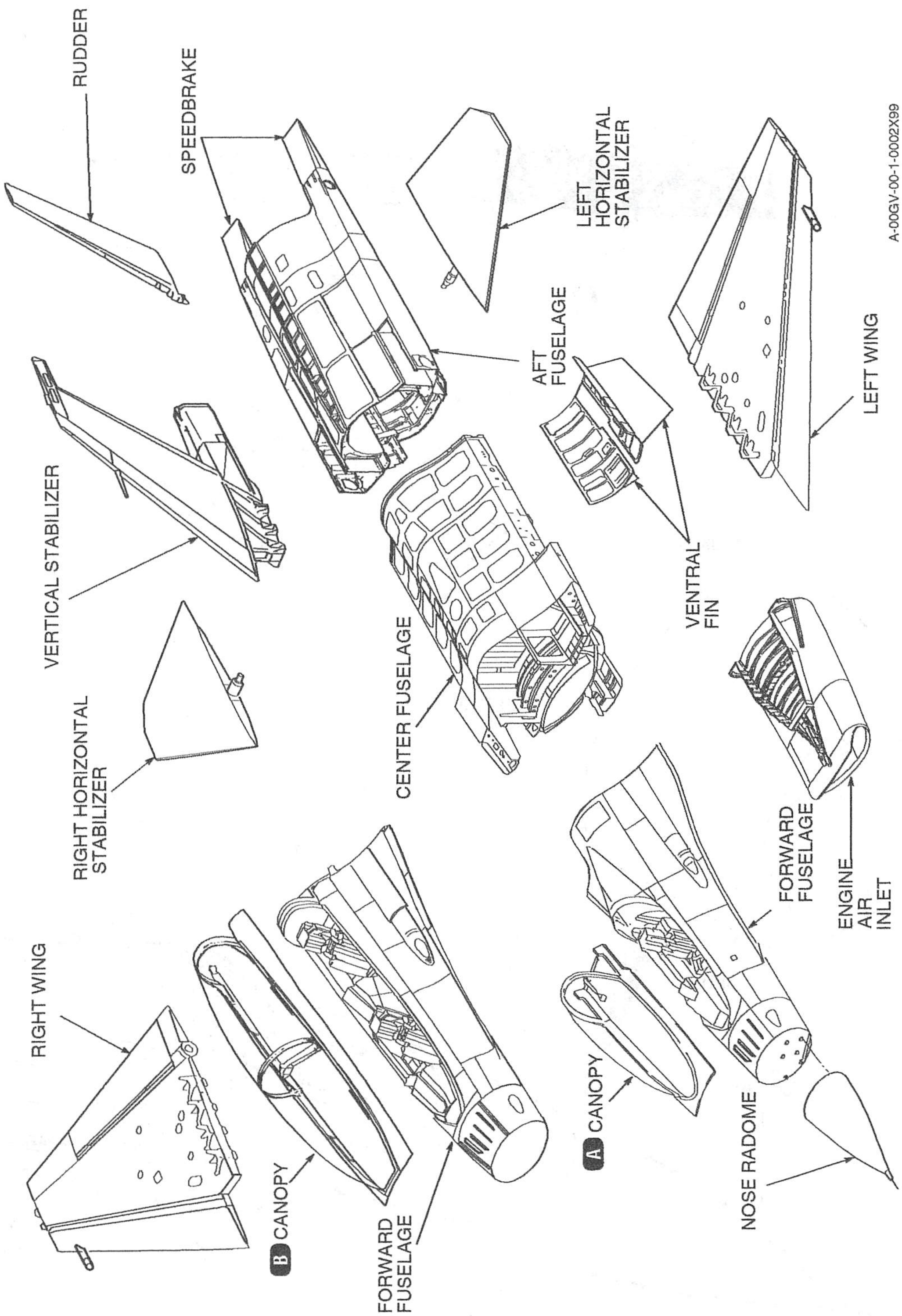


Figure 00-3. Aircraft Airframe.

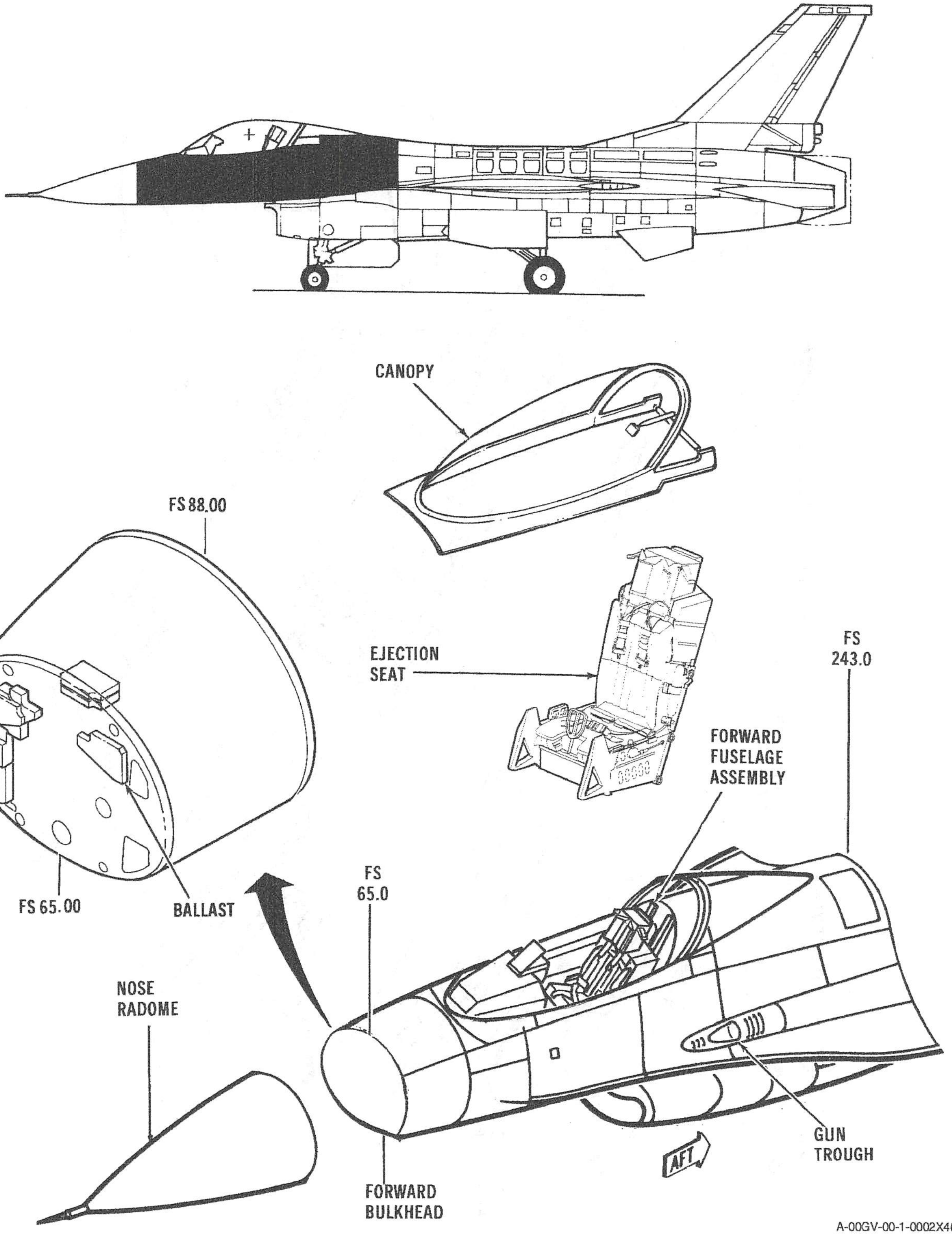


Figure 00-4. Forward Fuselage Assembly A.

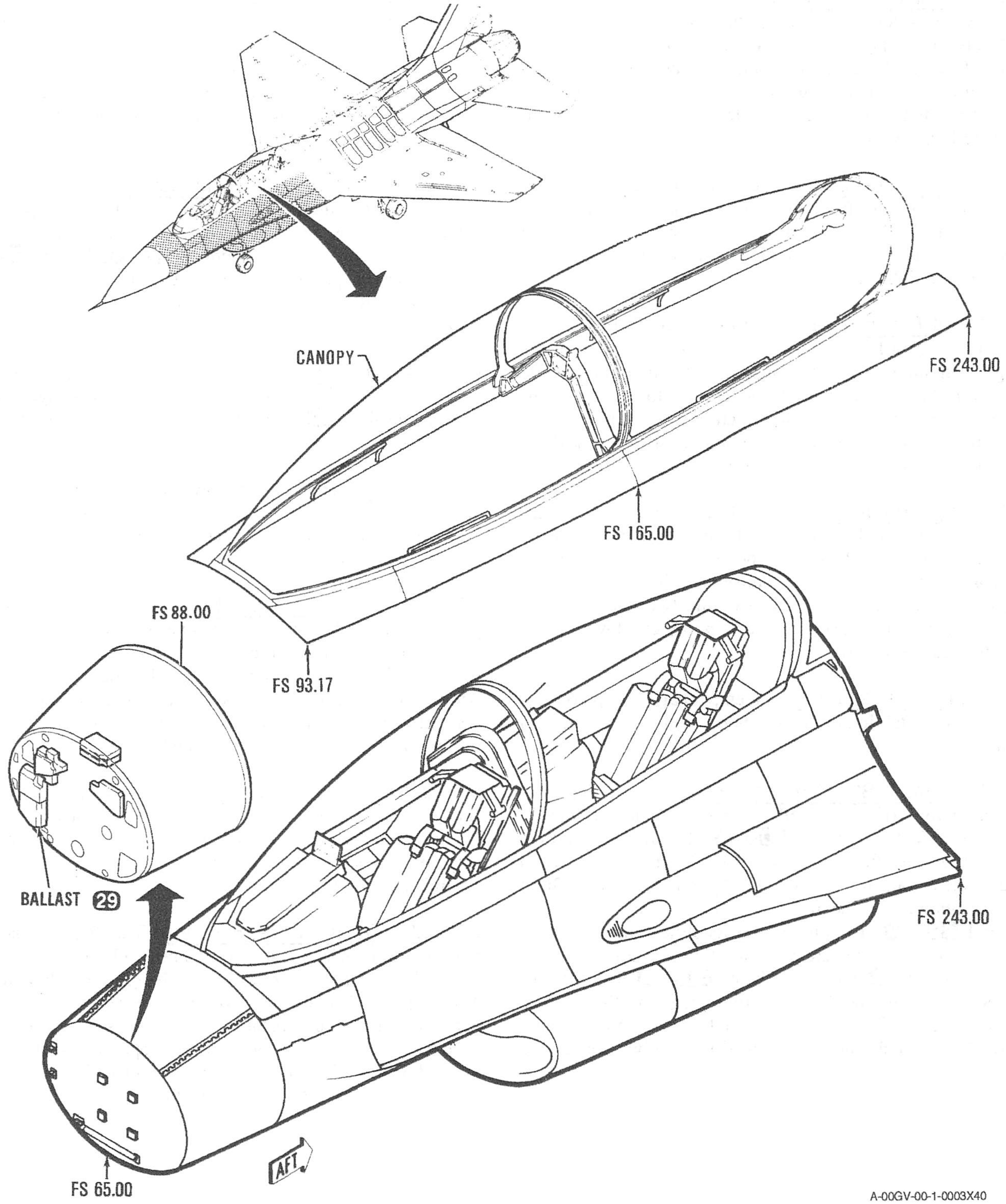


Figure 00-5. Forward Fuselage Assembly Ⓑ.

00.3.1.2 Engine Air Inlet. The engine air inlet assembly (Figure 00-6) is located beneath the forward fuselage and extends aft to fuselage station 243.0. The inlet is separated from the fuselage by a single boundary layer diverter ramp and the integral secondary air inlets for the air-conditioning system. The inlet incorporates an electrically heated strut to prevent buildup of ice.

00.3.1.3 Center Fuselage. The center fuselage assembly (Figure 00-7) extends from fuselage station 243.0 aft to fuselage station 373.8. The main landing gear shock struts and tension struts are attached to the airframe at the fuselage station 341.8 bulkhead.

00.3.1.4 Aft Fuselage. The aft fuselage assembly (Figure 00-8) extends from fuselage station 373.8 to the aft end of the fuselage. A titanium shield is installed in the upper aft nacelle cavity over the hot section of the engine to provide temperature protection for the basic structure and hardware. Protective armor plate provides protection against fuel tank damage in the event of engine fan failure.

00.3.1.5 Speedbrakes. The speedbrakes (Figure 00-8) are located on the left and right sides of the engine nozzle at the aft end of each aft fuselage outer body boom. The upper and lower panels are operated in a clamshell fashion by a central hydraulic actuator. The total travel of the two panels is 120 degrees (upper panel travels 60 degrees up and lower panel travels 60 degrees down).

00.3.2 Empennage Group. The empennage group consists of the vertical stabilizer, rudder, horizontal stabilizers, and ventral fins.

00.3.2.1 Vertical Stabilizer Assembly. The vertical stabilizer assembly (Figure 00-9) contains the dorsal fairing, leading edge, VHF antenna, ADF A HF antenna, vertical stabilizer box, and fuselage attachment fittings. The forward fairing (dorsal fairing) houses the hydraulic system flight control accumulators, the power supply for the anticollision lights and ADF A HF coupler and feedline. The aft fairing houses the rudder servoactuator, two threat warning system preamplifiers, and 5 the drag chute. ADF A The HF antenna is located in the lower leading edge of the vertical stabilizer. The VHF antenna is located in the upper leading edge of the vertical stabilizer. The tip assembly houses the anticollision light and a threat warning system antenna. The air refueling light is located at the base of the VHF antenna.

00.3.2.2 Rudder. The rudder assembly (Figure 00-9) is hinged to the vertical stabilizer by means of integral hinge lugs in the root rib. Rudder movement of ±30 degrees is accomplished by a servoactuator.

00.3.2.3 Horizontal Stabilizer Assemblies. The horizontal stabilizer (Figure 00-10) becomes a left or right part as the actuator fitting is attached during installation on the aircraft. Horizontal stabilizer movement of 19 159 ±25, 20 160 ±21 degrees is provided by two servoactuators (one for the left horizontal stabilizer and one for the right horizontal stabilizer).

00.3.2.4 Ventral Fins. The ventral fins (Figure 00-8) are attached to the lower surface of the aft fuselage and are interchangeable. 20 The aft 10 inches of the ventral fins are fiberglass.

00.3.3 Wing. The wing (Figure 00-11) consists of two (left and right) wing assemblies. Each wing assembly consists of the wing structural box, leading edge flap, trailing edge flaperon, and an outboard trailing edge panel.

00.3.3.1 Wing Structural Box. Five actuator attachment points are provided on the front spar for attaching the leading edge flap. Three hinge attachment fittings are provided on the rear spar for attaching the trailing edge flaperon. The entire wing structural box serves as an integral fuel tank. The box contains all components necessary for fuel transfer from both the box and pylon mounted fuel tanks.

00.3.3.2 Leading Edge Flap. The flap attaches to the front spar of the wing through four geared rotary actuators and a hinge on the outboard end. The rotary actuators include a two-stage planetary gear train driven by rigid torque shafts from a central drive unit located in the fuselage.

00.3.3.3 Trailing Edge Flaperon. The flaperon is a primary control surface that provides both aileron and flap functions. The entire flaperon is interchangeable left and right. The flaperon becomes a left or right part only when the actuator fittings are installed. The seal strips also provide access for maintenance operations. Flaperon travel is 20 degrees down to 23 degrees up for the aileron function and 0 to 20 degrees down for the flap function.

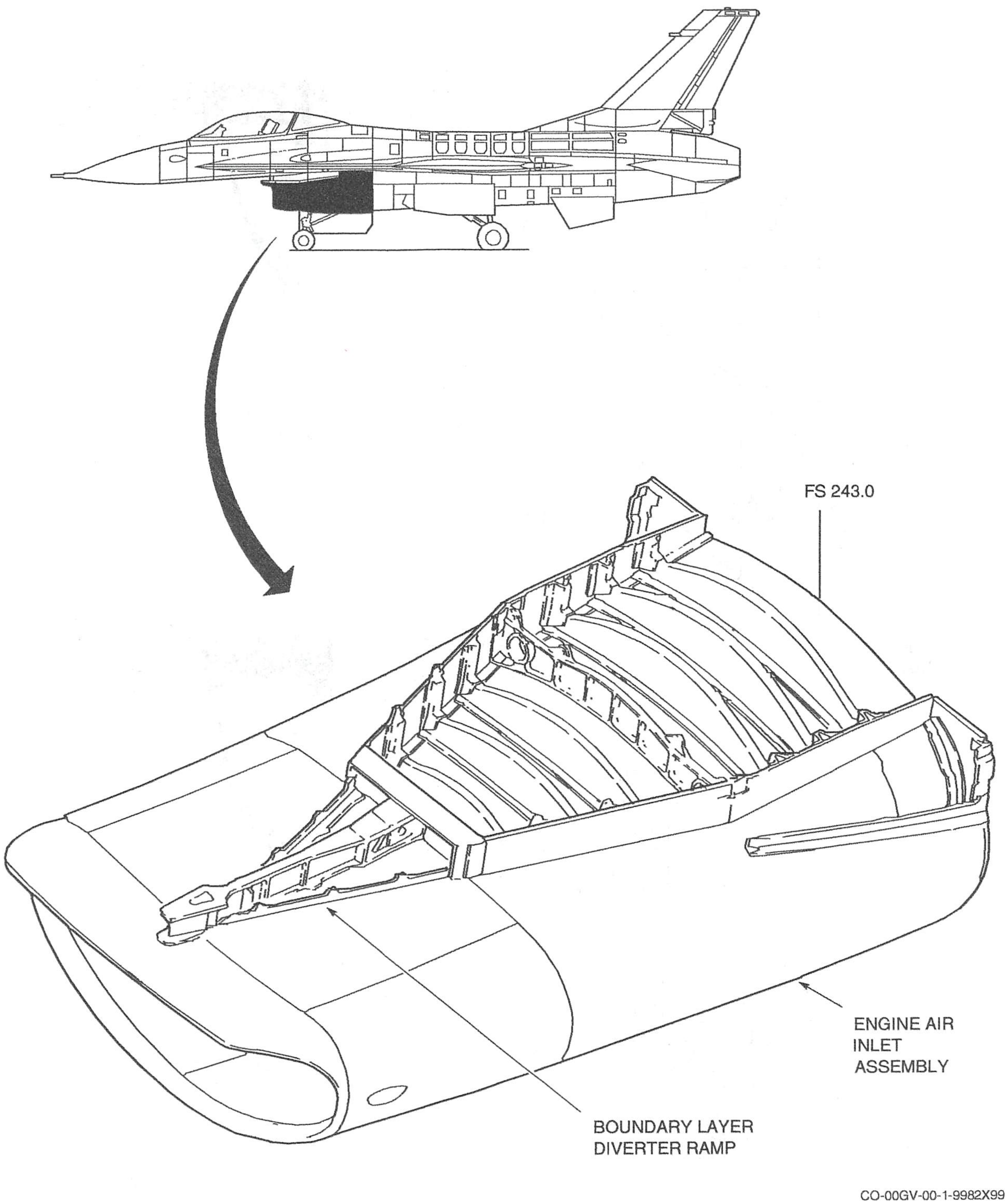


Figure 00-6. Engine Air Inlet Assembly.

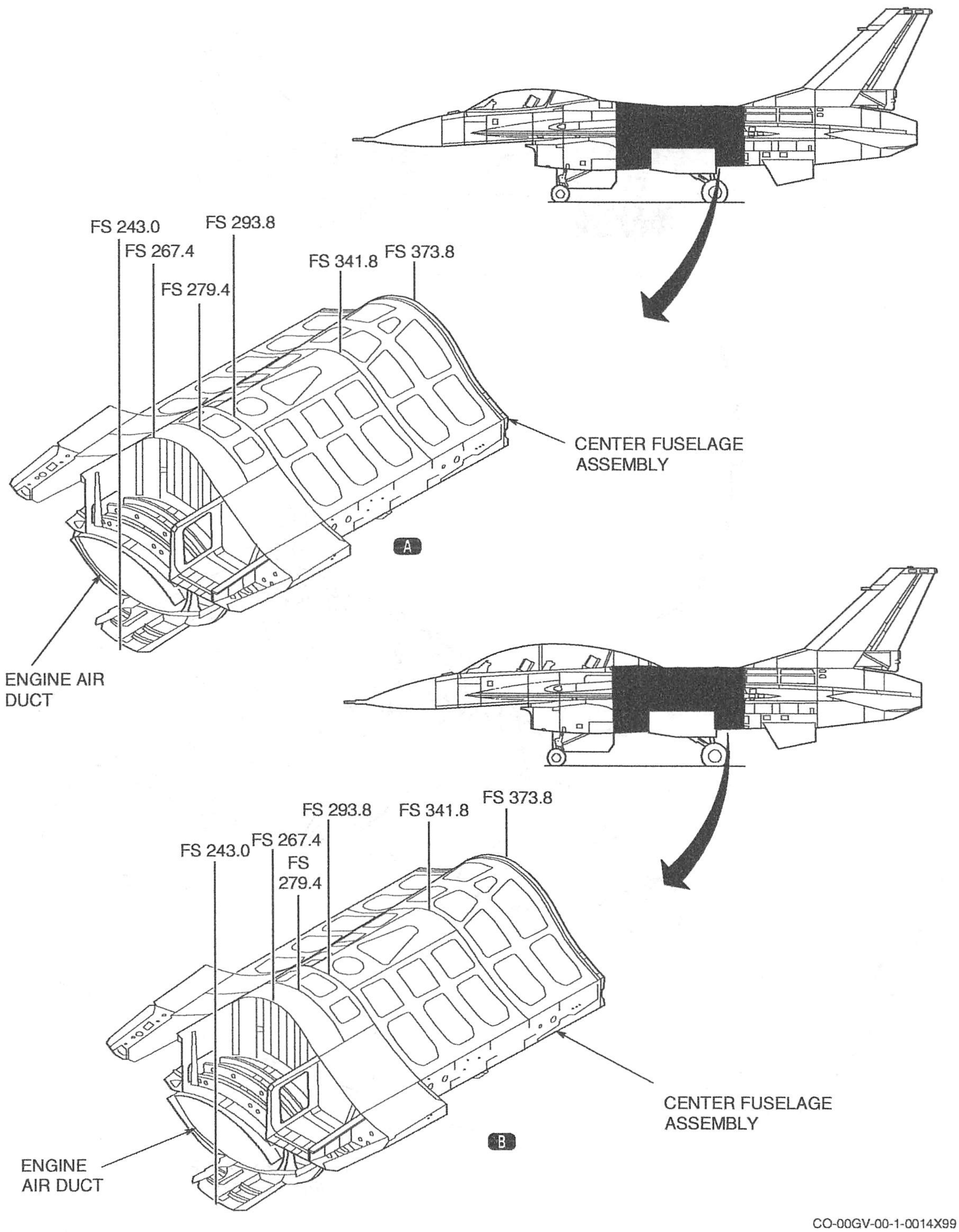


Figure 00-7. Center Fuselage Assembly.

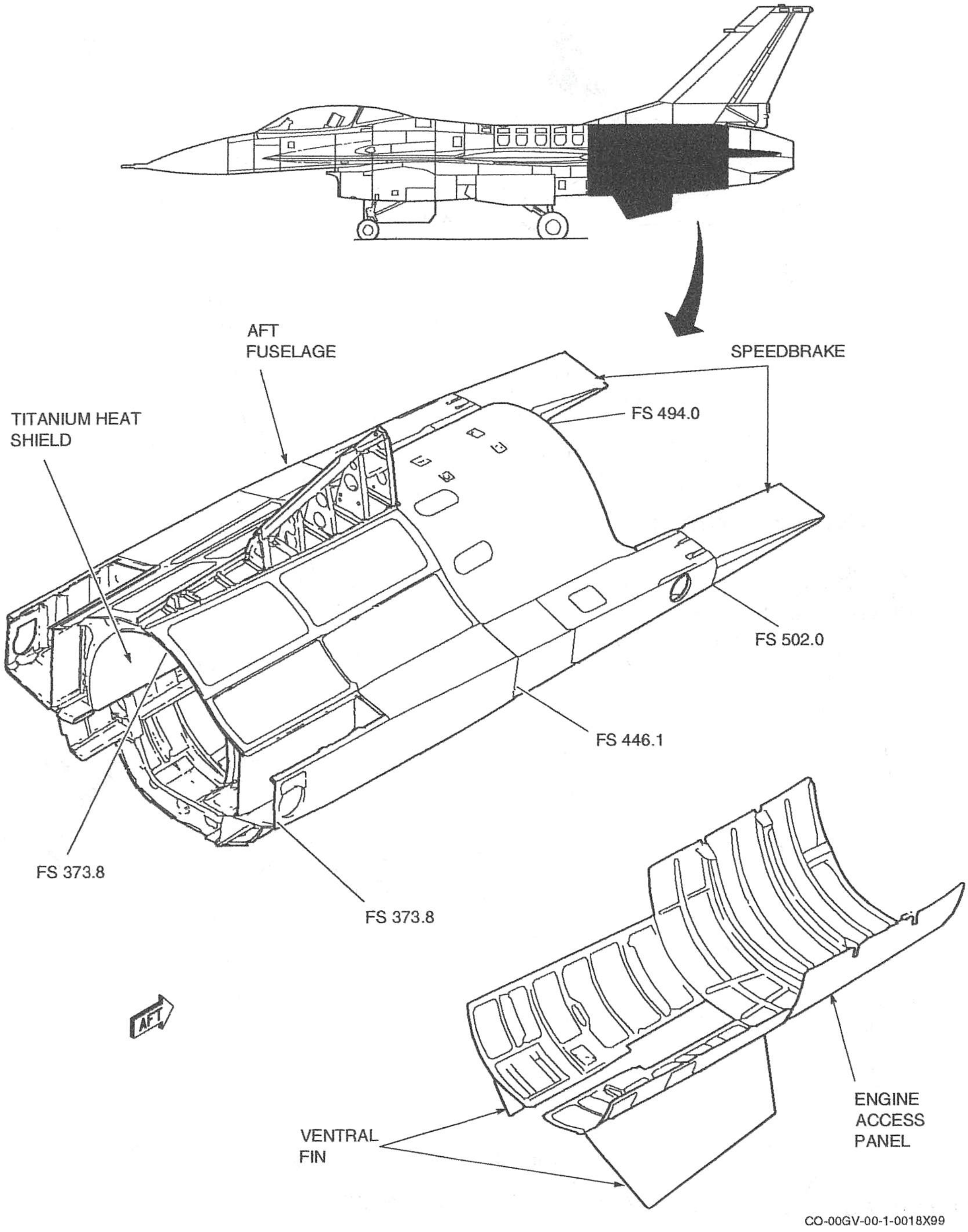


Figure 00-8. Aft Fuselage Assembly.

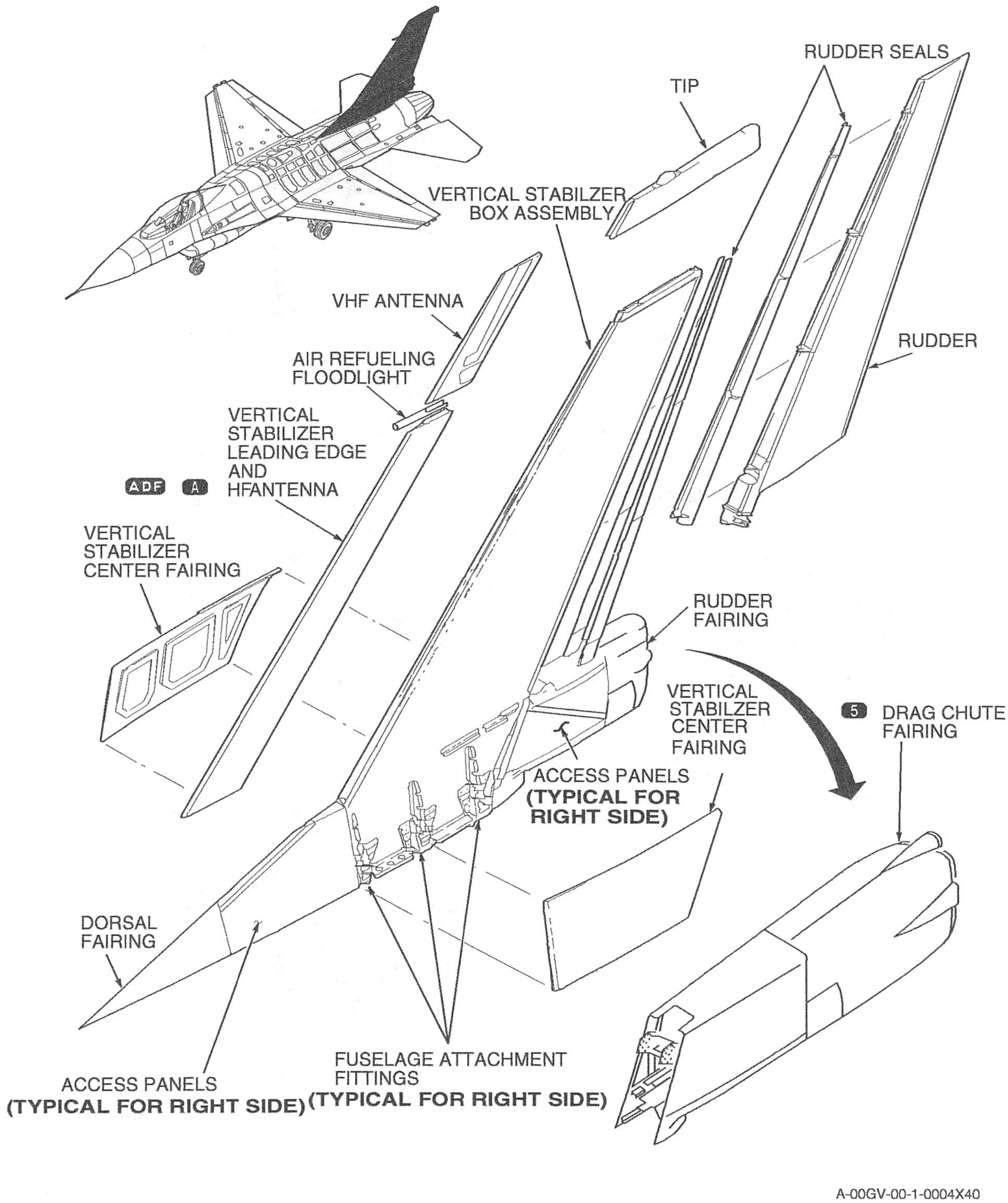


Figure 00-9. Vertical Stabilizer Assembly.

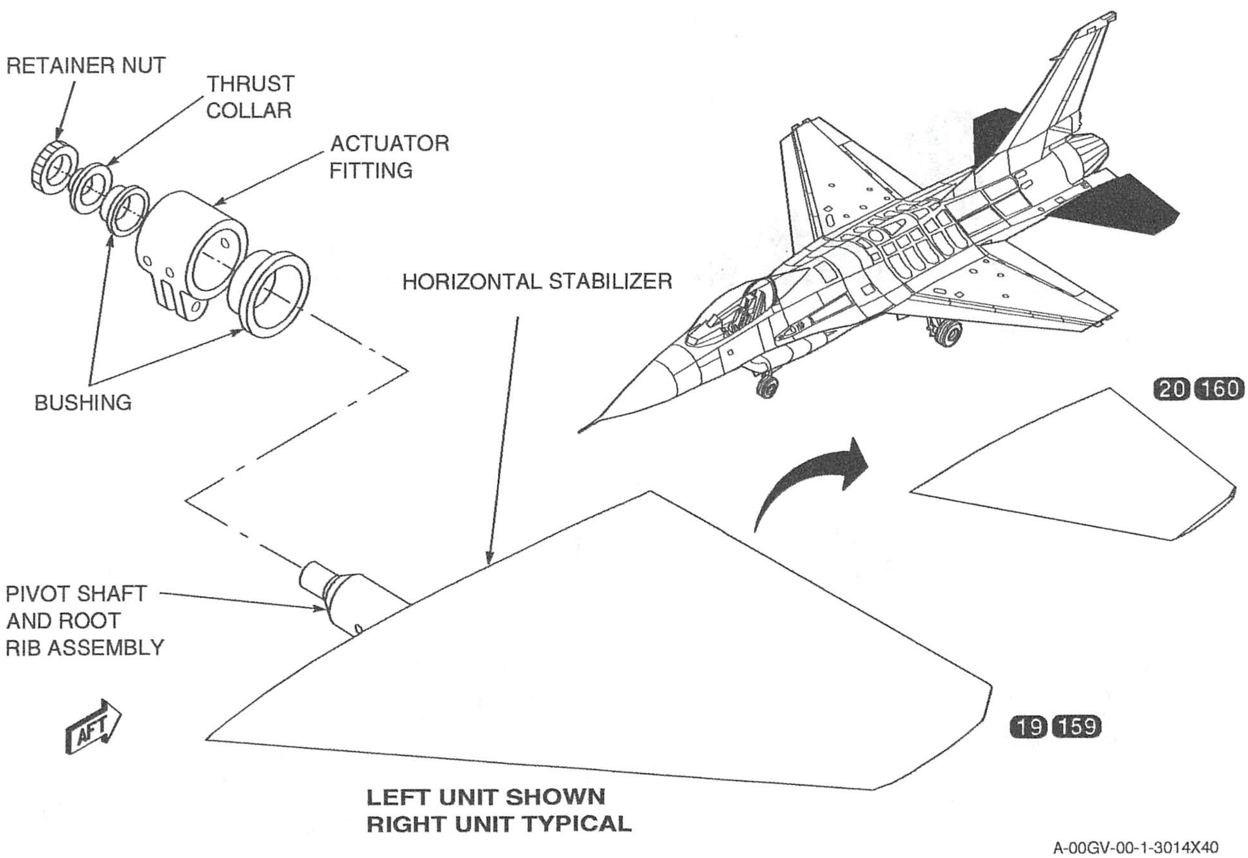


Figure 00-10. Horizontal Stabilizer Assembly.

00.4 COCKPIT ARRANGEMENT.

The cockpit features low profile geometry, a maximum visibility single-piece bubble canopy/windshield, an open ejection seat, and a life support system. The cockpit is arranged to permit eyes-on-target attack without the pilot having to move his hands from the throttle grip or the side stick controller. The raised heel rest line and the 30-degree back angle of the ejection seat enhance pilot comfort and g tolerance throughout the performance range of the aircraft. The single-piece bubble canopy/windshield permits 15-degree over-the-nose, 40-degree over-the-side, and 360-degree upper hemisphere vision. The instrument panel and consoles are arranged for quick identification and natural scanning patterns. The instrument panel contains the head-up display, flight and engine instruments, threat displays, armament and stores management panels, and the radar/electro-optical display. The left console contains the throttle grip and control panels frequently used in flight. The right console contains the side stick controller and less frequently used control panels. Other pilot comfort items include relief facilities, map and data stowage provisions, adjustable armrest, and electric seat adjustment (vertical). A general cockpit arrangement illustration of the cockpit is shown in Figure 00-12.

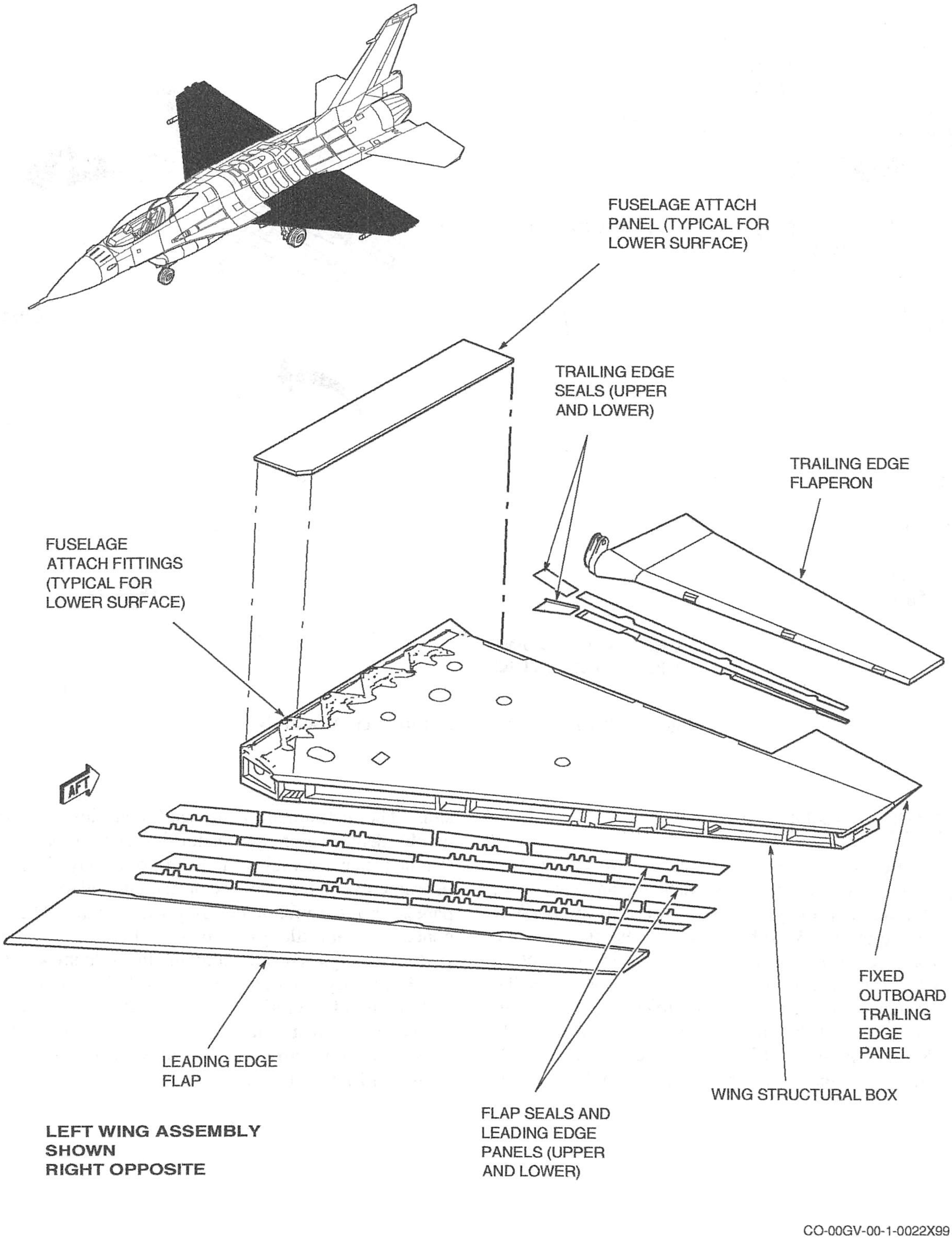
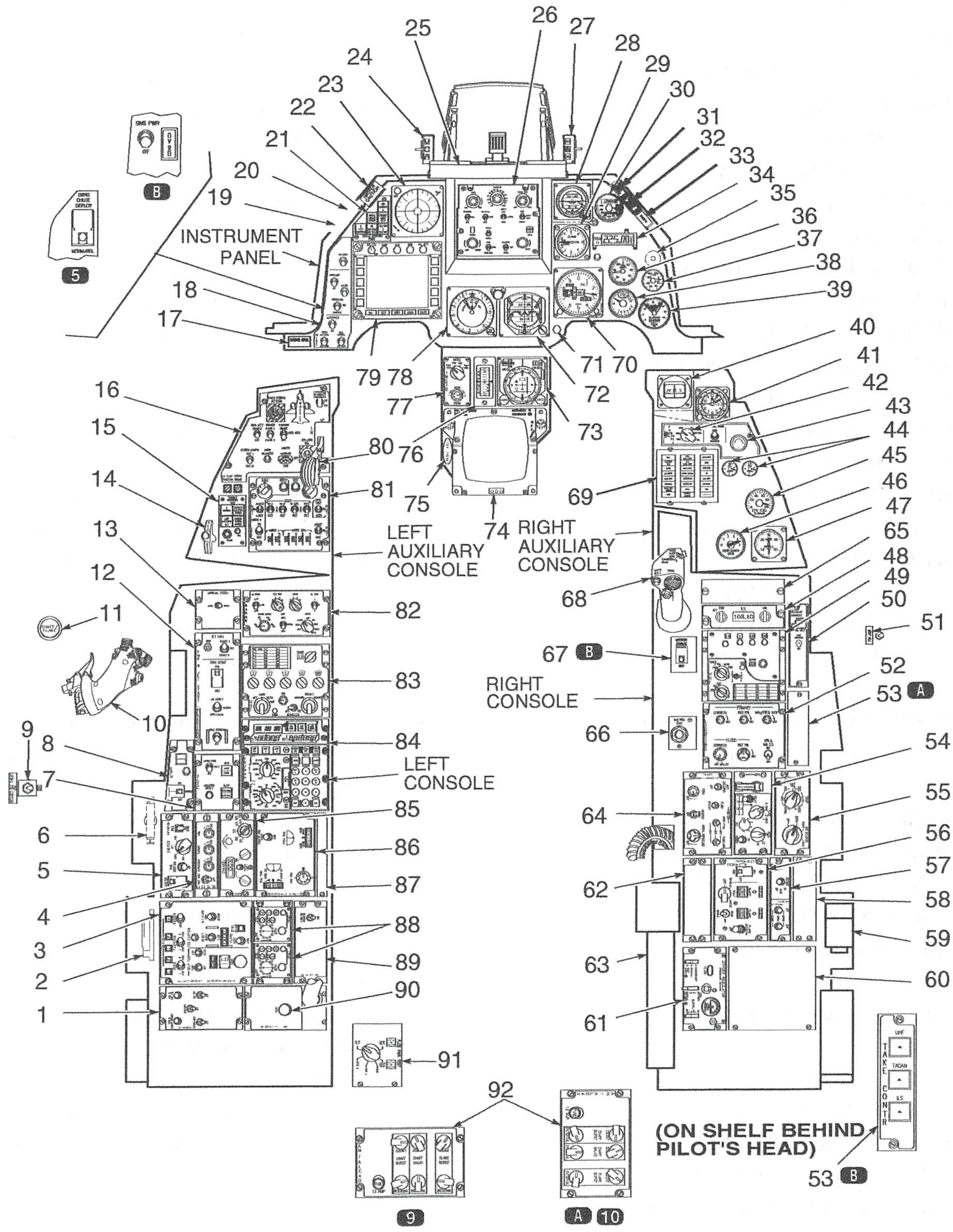


Figure 00-11. Wing Assembly.



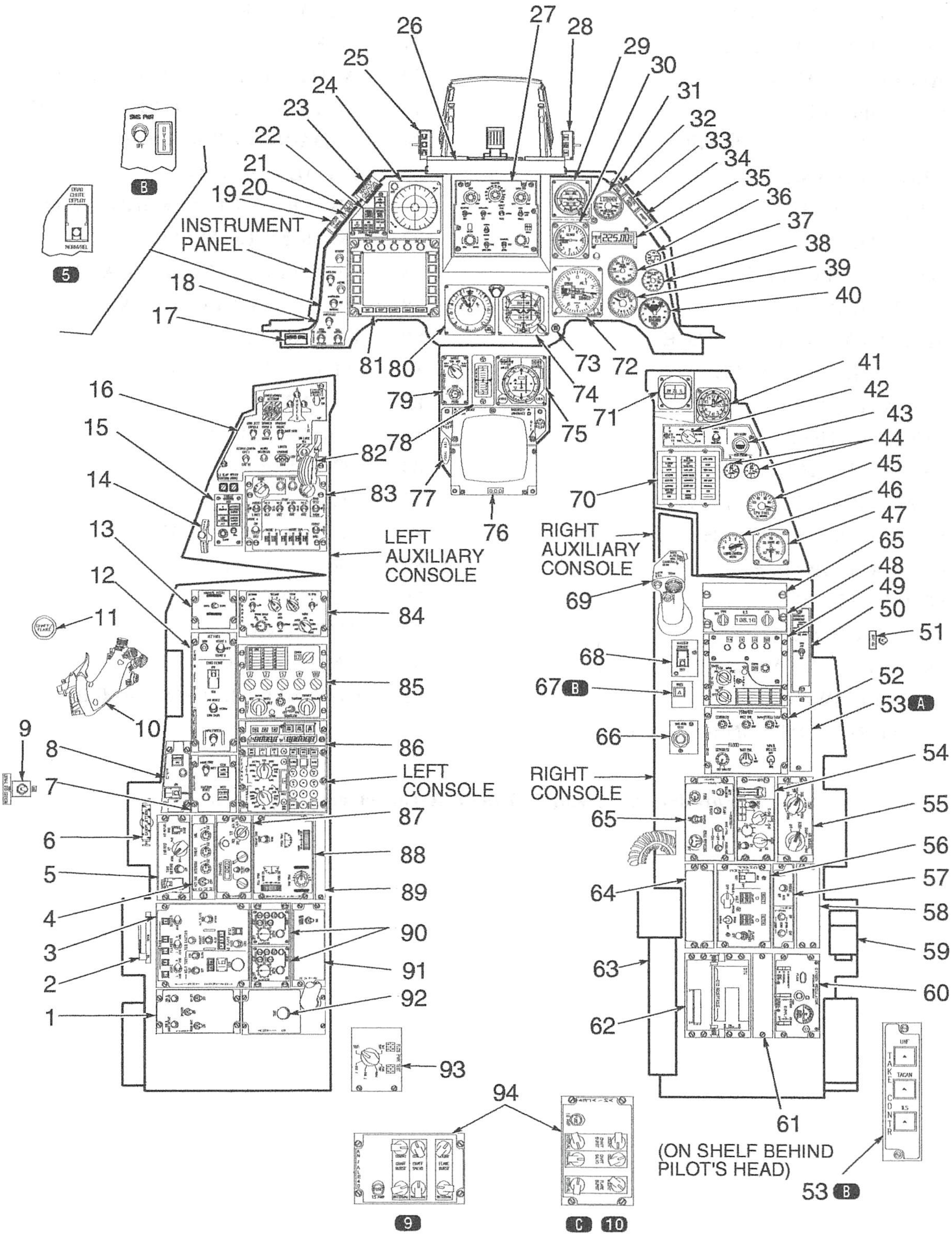
22 FWD COCKPIT

A-00GV-00-1-0005X40

1 TEST PANEL
2 DEFOG LEVER
3 FLIGHT CONTROL PANEL
4 COMM PANEL
5 FUEL PANEL
6 CANOPY JETTISON HANDLE
7 ELEC PANEL
8 EPU PANEL
9 REDUCED IDLE THRUST SWITCH
10 THROTTLE GRIP
•VHF UHF SWITCH
•MAN RNG/UNCAGE SWITCH
•DOGFIGHT SWITCH
•ANT ELEV SWITCH
•SPD BRK SWITCH
•RDR CURSOR/ENABLE SWITCH
•CUTOFF RELEASE LEVER
•FRICTION CONTROL
11 CHAFF/FLARE SWITCH
12 ENG & JET START PANEL
13 MANUAL PITCH OVERRIDE SWITCH
14 ALT GEAR HANDLE
15 THREAT WARNING AUX PANEL
16 LANDING GEAR PANEL
•HOOK SWITCH
•WHEELS POSITION LIGHTS
•EMER STORES JETTISON SWITCH
•GND JETTISON HANDLE
•BRAKES SWITCH
•BRAKES SELECTOR SWITCH
•LG HANDLE
•DN LOCK REL BUTTON
•LIGHTS SWITCH
•HORN SILENCER SWITCH
•ALT FLAPS SWITCH
•SPEEDBRAKE INDICATOR
•STORES CONFIG SWITCH
•DOWN PERMISSION SWITCH
17 RADIO CALL INDICATOR
18 MISC PANEL
•IFF IDENT SWITCH
5 DRAG CHUTE DEPLOY SWITCH
•SMS POWER SWITCH
•MASTER ARM SWITCH
•AUTOPILOT SWITCH
•A ALT REL SWITCH
B OVRD SWITCH
•PITCH SWITCH
•ROLL SWITCH
19 ENG FIRE LIGHT
20 TO/LAND CONFIG LIGHT
21 THREAT WARNING PRIME PANEL
22 MASTER CAUTION LIGHT
23 AZIMUTH INDICATOR
24 AOA INDEXER
25 COCKPIT TELEVISION SENSOR (CTVS)
26 HEAD UP DISPLAY (HUD)
27 AIR REFUELING INDICATOR
28 STANDBY ATTITUDE INDICATOR
29 VERTICAL VELOCITY INDICATOR
30 FUEL FLOW INDICATOR
31 DUAL FC FAIL LIGHT
32 HYD/OIL PRESS LIGHT
33 CANOPY LIGHT
34 CHANNEL FREQUENCY INDICATOR
35 ENGINE OIL PRESSURE INDICATOR
36 RPM PERCENT INDICATOR
37 NOZ POS INDICATOR
38 FTIT INDICATOR
39 FUEL INDICATOR
40 MAGNETIC COMPASS
41 CLOCK
42 FUEL QTY SEL PANEL
43 OXY FLOW INDICATOR
44 HYD PRESS INDICATORS
45 EPU FUEL INDICATOR
46 LIQUID OXYGEN INDICATOR
47 COCKPIT PRESSURE ALT INDICATOR
48 ILS INDICATOR
49 VHF RADIO
50 NUCLEAR CONSENT PANEL
51 SEAT ADJUSTMENT SWITCH
52 LIGHTING PANEL
53 A GROWTH PANEL

B TAKE CONTR PANEL
54 SECURE VOICE PANEL
55 AIR COND PANEL
56 CHAFF/FLARE PANEL
57 ANTI-ICE/ANT SEL PANEL
58 GROWTH PANEL
59 UTILITY LIGHT
60 GROWTH PANEL
61 OXYGEN REGULATOR PANEL
62 GROWTH PANEL
63 MAP AND DATA STOWAGE
64 EXT LIGHTING PANEL
65 GROWTH PANEL
66 BUC GND TEST
67 B NWS SWITCH
68 SIDE STICK CONTROLLER
•CAMERA/GUN SWITCH
•WPN REL SWITCH
•TRIM SWITCH
•RESIG RET SRCH SWITCH
•NWS A/R DISC MSL STEP SWITCH
•PADDLE SWITCH
69 CAUTION LIGHT PANEL
70 ALTIMETER
71 MRK BCN LIGHT
72 ATTITUDE DIRECTOR INDICATOR
73 HORIZONTAL SITUATION INDICATOR
74 RADAR/EO INDICATOR
75 PEDAL ADJ KNOB
76 ANGLE-OF-ATTACK INDICATOR
77 INSTR MODE SELECT
78 AIRSPEED/MACH INDICATOR
79 STORES CONTROL PANEL
80 LG HANDLE
81 IFF CONTROL PANEL
82 RADAR PANEL
83 UHF RADIO PANEL
84 FC/NAV PANEL
85 TCN PANEL
86 MANUAL TRIM PANEL
87 GROWTH PANEL
88 ECM PANEL
89 AVTR PANEL
90 ANTI G PANEL
92 CHAFF/FLARE PROGRAMMER

Figure 00-12. Cockpit General Arrangement. (Sheet 1 of 7)



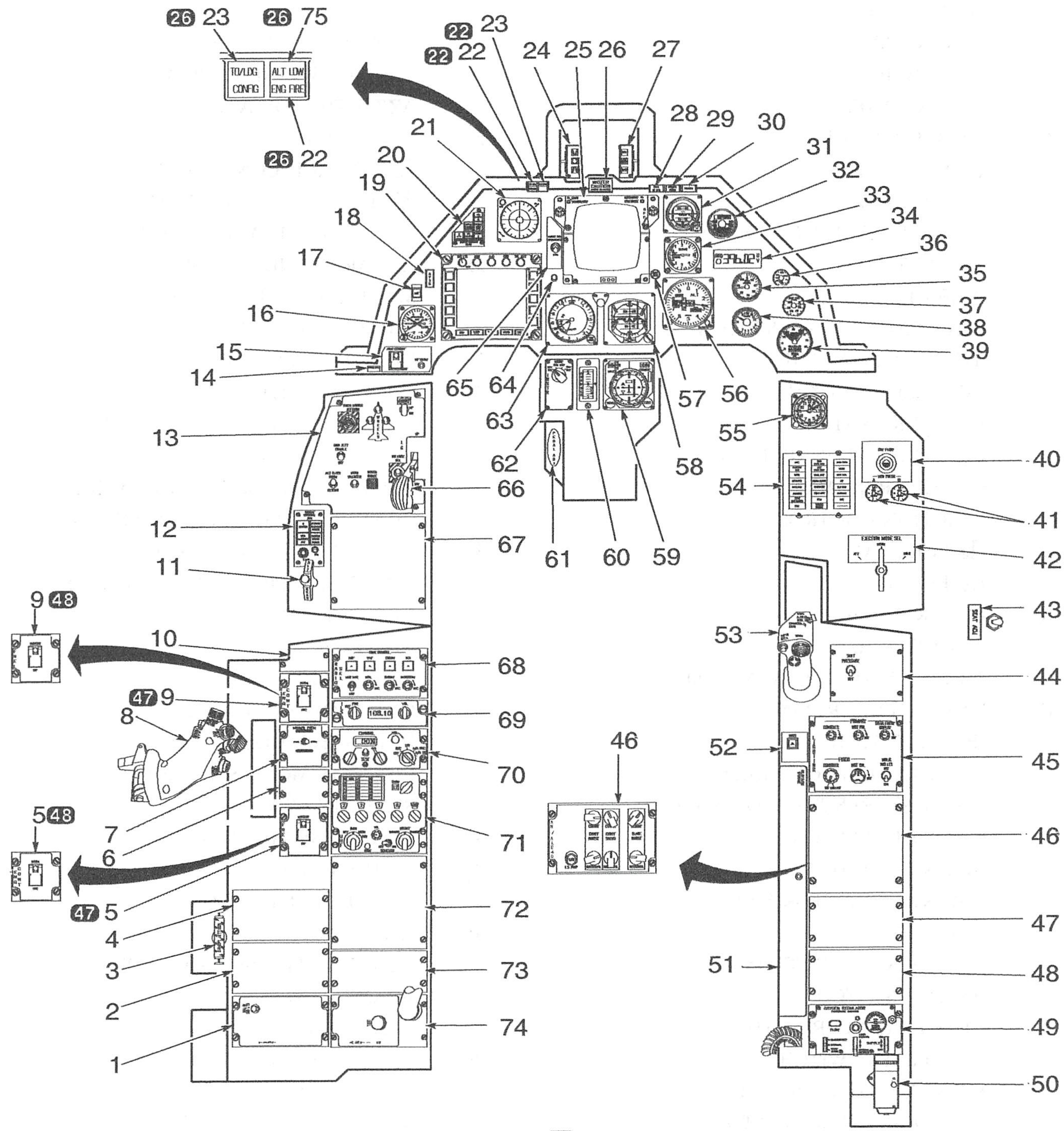
26 FWD COCKPIT

A-00GV-00-1-0006X40

1 TEST PANEL
2 DEFOG LEVER
3 FLIGHT CONTROL PANEL
4 COMM PANEL
5 FUEL PANEL
6 CANOPY JETTISON HANDLE
7 ELEC PANEL
8 EPU PANEL
9 REDUCED IDLE THRUST SWITCH
10 THROTTLE GRIP
•VHF UHF SWITCH
•MAN RNG/UNCAGE SWITCH
•DOGFIGHT SWITCH
•ANT ELEV SWITCH
•SPD BRK SWITCH
•RDR CURSOR/ENABLE SWITCH
•CUTOFF RELEASE LEVER
•FRICTION CONTROL
11 CHAFF/FLARE SWITCH
12 ENG & JET START PANEL
13 MANUAL PITCH OVERRIDE SWITCH
14 ALT GEAR HANDLE
15 THREAT WARNING AUX PANEL
16 LANDING GEAR PANEL
•HOOK SWITCH
•WHEELS POSITION LIGHTS
•EMER STORES JETTISON SWITCH
•GND JETTISON HANDLE
•BRAKES SWITCH
•BRAKES SELECTOR SWITCH
•LG HANDLE
•DN LOCK REL BUTTON
•LIGHTS SWITCH
•HORN SILENCER SWITCH
•ALT FLAPS SWITCH
•SPEEDBRAKE INDICATOR
•STORES CONFIG SWITCH
•DOWN PERMISSION SWITCH
17 RADIO CALL INDICATOR
18 MISC PANEL
•IFF IDENT SWITCH
•5 DRAG CHUTE DEPLOY SWITCH
•SMS POWER SWITCH
•MASTER ARM SWITCH
•AUTOPILOT SWITCH
•A ALT REL SWITCH
•B OVRD SWITCH
•PITCH SWITCH
•ROLL SWITCH
19 TO/LAND CONFIG LIGHT
20 ENG FIRE LIGHT
21 ALT LOW LIGHT
22 THREAT WARNING PRIME PANEL
23 MASTER CAUTION LIGHT
24 AZIMUTH INDICATOR
25 AOA INDEXER
26 COCKPIT TELEVISION SENSOR (CTVS)
27 HEAD-UP DISPLAY (HUD)
28 AIR REFUELING INDICATOR
29 STANDBY ATTITUDE INDICATOR
30 VERTICAL VELOCITY INDICATOR
31 FUEL FLOW INDICATOR
32 DUAL FC FAIL LIGHT
33 HYD/OIL PRESS LIGHT
34 CANOPY LIGHT
35 CHANNEL FREQUENCY INDICATOR
36 ENGINE OIL PRESSURE INDICATOR
37 RPM PERCENT INDICATOR
38 NOZ POS INDICATOR
39 FTIT INDICATOR
40 FUEL INDICATOR
41 CLOCK
42 FUEL QTY SEL PANEL
43 OXY FLOW INDICATOR
44 HYD PRESS INDICATORS
45 EPU FUEL INDICATOR
46 LIQUID OXYGEN INDICATOR
47 COCKPIT PRESSURE ALT INDICATOR
48 ILS INDICATOR
49 VHF RADIO
50 NUCLEAR CONSENT PANEL
51 SEAT ADJUSTMENT SWITCH
52 LIGHTING PANEL
53 A BLANK PANEL

	Ⓑ TAKE CONTR PANEL
54	SECURE VOICE PANEL
55	AIR COND PANEL
56	CHAFF/FLARE PANEL
57	ANTI-ICE/ANT SEL PANEL
58	BLANK PANEL
59	UTILITY LIGHT
60	OXYGEN REGULATOR PANEL
61	GROWTH PANEL
62	DATA TRANSFER UNIT
63	MAP AND DATA STOWAGE
64	BLANK PANEL
65	EXT LIGHTING PANEL
66	BUC GND TEST
67	MASTER ZEROIZE SWITCH
68	Ⓑ NWS SWITCH
69	SIDE STICK CONTROLLER
	•CAMERA/GUN SWITCH
	•WPN REL SWITCH
	•TRIM SWITCH
	•RESIG RET SRCH SWITCH
	•NWS A/R DISC MSL STEP SWITCH
	•PADDLE SWITCH
70	CAUTION LIGHT PANEL
71	MAGNETIC COMPASS
72	ALTIMETER
73	MRK BCN LIGHT
74	ATTITUDE DIRECTOR INDICATOR
75	HORIZONTAL SITUATION INDICATOR
76	RADAR/EO INDICATOR
77	PEDAL ADJ KNOB
78	ANGLE-OF-ATTACK INDICATOR
79	INSTR MODE SELECT
80	AIRSPEED/MACH INDICATOR
81	STORES CONTROL PANEL
82	LG HANDLE
83	IFF CONTROL PANEL
84	RADAR PANEL
85	UHF RADIO PANEL
86	FC/NAV PANEL
87	TCN PANEL
88	MANUAL TRIM PANEL
89	BLANK PANEL
90	ECM PANEL
91	AVTR PANEL
92	ANTI G PANEL
93	FLCS PWR TEST PANEL
94	CHAFF/FLARE PROGRAMMER

Figure 00-12. Cockpit General Arrangement. (Sheet 2)



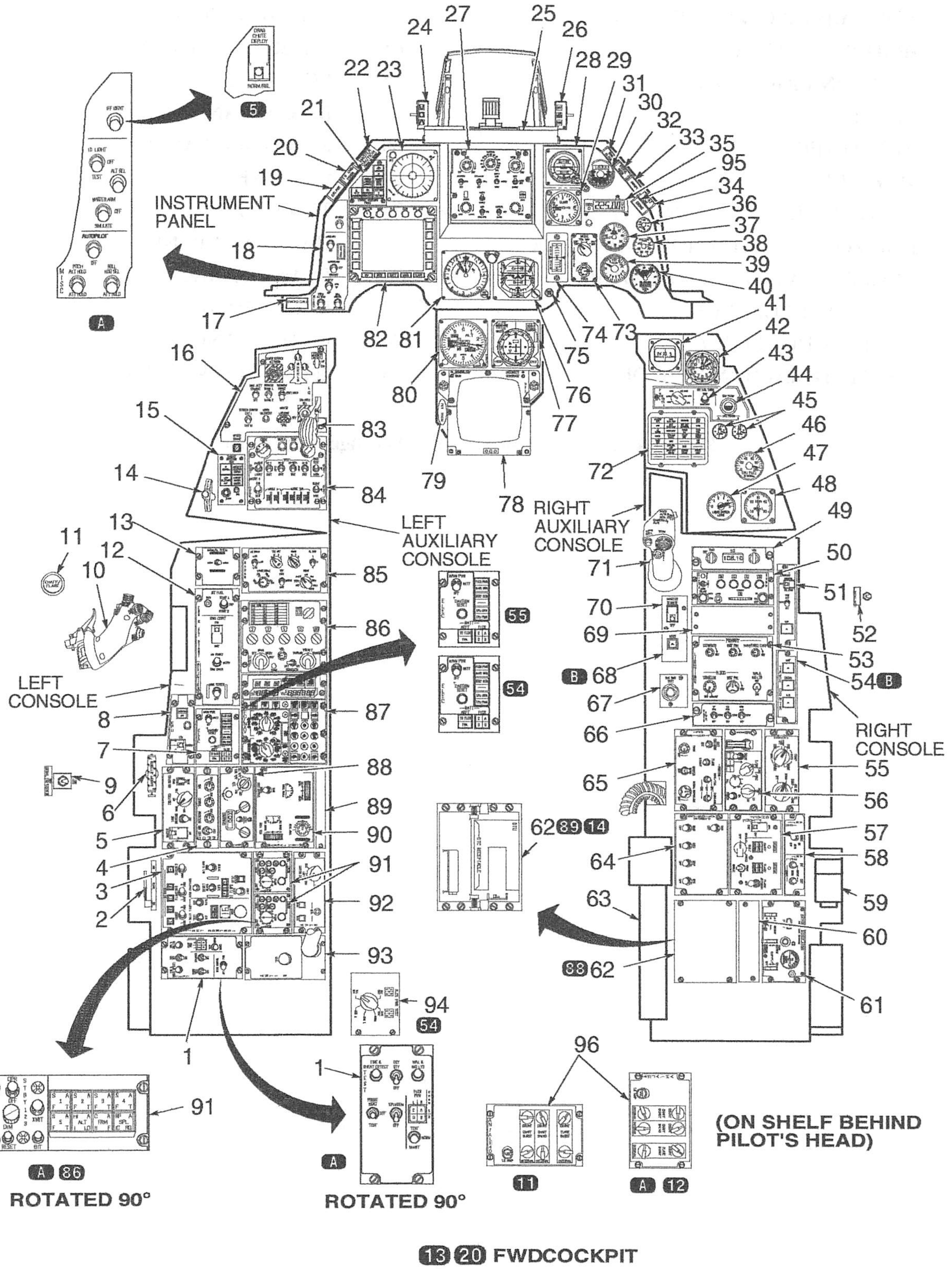
19 AFT COCKPIT

A-00GV-00-1-0007X40

1	TEST PANEL
2	BLANK PANEL
3	CANOPY JETTISON HANDLE
4	BLANK PANEL
5	47 BUC SWITCH
	48 FUEL PANEL
6	BLANK PANEL
7	MANUAL PITCH SWITCH
8	THROTTLE GRIP
	•VHF UHF SWITCH
	•MAN RNG/UNCAGE SWITCH
	•DOGFIGHT SWITCH
	•ANT ELEV SWITCH
	•SPD BRK SWITCH
	•RDR CURSOR/ENABLE SWITCH
	•CUTOFF RELEASE LEVER
	•FRICTION CONTROL
9	47 FUEL PANEL
	48 BUC SWITCH
10	BLANK PANEL
11	ALT GEAR HANDLE
12	THREAT WARNING AUX PANEL
13	LANDING GEAR PANEL
	•HOOK SWITCH
	•WHEELS POSITION LIGHTS
	•EMER STORES JETTISON SWITCH
	•GND JETT SWITCH
	•BRAKES SWITCH
	•BRAKES SELECTOR SWITCH
	•LG HANDLE
	•DN LOCK REL BUTTON
	•LIGHTS SWITCH
	•HORN SILENCER SWITCH
	•ALT FLAPS SWITCH
	•LE FLAP POSITION INDICATOR
	•SPEED BRAKE INDICATOR
	•STORES CONFIG SWITCH
	•DOWN PERMISSION SWITCH
14	RADIO CALL
15	AFT ARMAMENT CONSENT PANEL
16	ACCELEROMETER
17	SIDE STICK SELECTOR INDICATOR
18	OVRD SWITCH
19	STORES CONTROL PANEL
20	THREAT WARNING PRIME PANEL
21	AZIMUTH INDICATOR
22	ENG FIRE LIGHT
23	22 TO/LAND CONFIG LIGHT
	26 TO/LDG CONFIG LIGHT
24	ANGLE-OF-ATTACK INDEXER
25	RADAR/EO INDICATOR
26	MASTER CAUTION LIGHT
27	AIR REFUELING INDICATOR
28	DUAL FC FAIL LIGHT
29	CANOPY LIGHT
30	STANDBY ATTITUDE INDICATOR
31	FUEL FLOW INDICATOR
32	VERTICAL VELOCITY INDICATOR
33	CHANNEL FREQUENCY INDICATOR
34	RPM PERCENT INDICATOR
35	ENGINE OIL PRESSURE INDICATOR
36	NOZ POS INDICATOR
37	FTIT INDICATOR
38	FUEL INDICATOR
39	OXY FLOW INDICATOR
40	HYD PRESS INDICATORS
41	EJECTION MODE SEL PANEL
42	SEAT ADJ SWITCH
43	SUIT PRESSURE SWITCH
44	LIGHTING PANEL
45	HYD/OIL PRESS LIGHT
46	9 BLANK PANEL
	10 CHAFF/FLARE PROGRAMMER
47	BLANK PANEL
48	BLANK PANEL
49	OXYGEN REGULATOR PANEL
50	UTILITY LIGHT
51	RELIEF/MISC STOWAGE
52	NWS SWITCH
53	SIDE STICK CONTROLLER
	•CAMERA/GUN SWITCH
	•WPN REL SWITCH
	•TRIM SWITCH
	•DESIG RET SRCH SWITCH

	•NWS A/R DISC MSL STEP SWITCH	64	RIT INDICATOR
	•PADDLE SWITCH	65	VIDEO SEL SWITCH
54	CAUTION LIGHT PANEL	66	LG HANDLE
55	CLOCK	67	BLANK PANEL
56	ALTIMETER	68	RADIO SEL PANEL
57	MRK BCN LIGHT	69	ILS PANEL
58	ATTITUDE DIRECTOR INDICATOR	70	TCN PANEL
59	HORIZONTAL SITUATION INDICATOR	71	UHF RADIO PANEL
60	ANGLE-OF-ATTACK INDICATOR	72	BLANK PANEL
61	PEDAL ADJ CONTROL	73	BLANK PANEL
62	INSTR MODE SELECT	74	ANTI G PANEL
63	AIRSPEED/MACH INDICATOR	75	26 ALT LOW LIGHT

Figure 00-12. Cockpit General Arrangement. (Sheet 3)

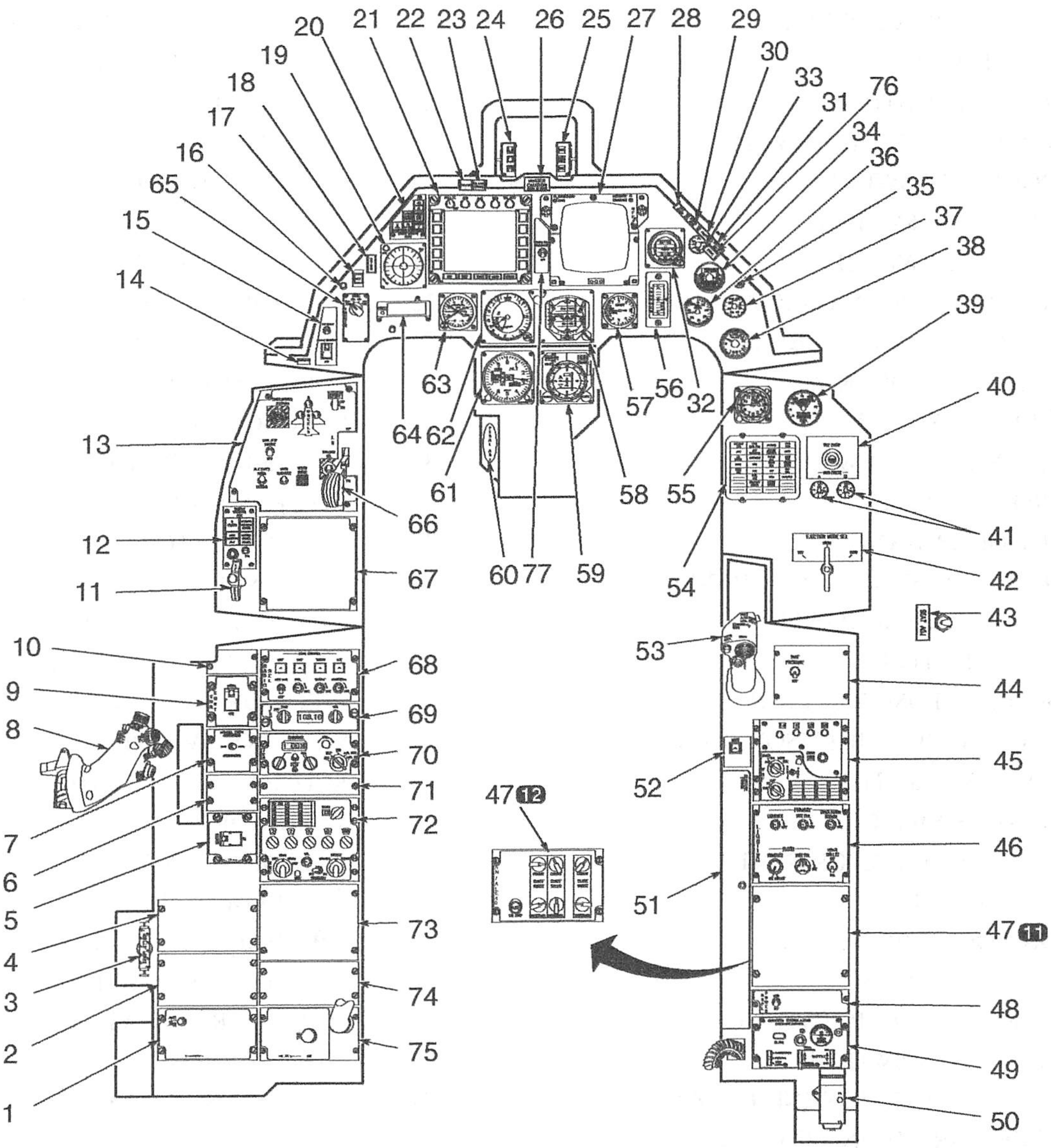


A-00GV-00-1-0011X40

1	TEST PANEL
2	DEFOG LEVER
3	FLIGHT CONTROL PANEL
4	COMM PANEL
5	FUEL PANEL
6	CANOPY JETTISON HANDLE
7	ELEC PANEL
8	EPU PANEL
9	REDUCED IDLE THRUST SWITCH
10	THROTTLE GRIP
	VHF UHF SWITCH
	MAN RNG/UNCAGE SWITCH
	DOGFIGHT SWITCH
	ANT ELEV SWITCH
	SPD BRK SWITCH
	RDR CURSOR/ENABLE SWITCH
	CUTOFF RELEASE LEVER
	FRICTION CONTROL
11	CHAFF/FLARE SWITCH
12	ENG & JET START PANEL
13	MANUAL PITCH SWITCH
14	ALT GEAR HANDLE
15	THREAT WARNING AUX PANEL
16	LANDING GEAR PANEL
	HOOK SWITCH
	WHEELS POSITION LIGHTS
	EMER STORES JETTISON SWITCH
	GND JETT SWITCH
	BRAKES SWITCH
	BRAKES SELECTOR SWITCH
	LG HANDLE
	DN LOCK REL BUTTON
	LIGHTS SWITCH
	HORN SILENCER SWITCH
	ALT FLAPS SWITCH
	LE FLAP POSITION INDICATOR
	SPEED BRAKE INDICATOR
	STORES CONFIG SWITCH
	DOWN PERMISSION SWITCH
17	RADIO CALL
18	MISC PANEL
	IFF IDENT SWITCH
	(5) DRAG CHUTE DEPLOY SWITCH
	LASER ARM SWITCH
	(A) ALT REL SWITCH
	(B) OVRD LIGHT
	MASTER ARM SWITCH
	AUTOPILOT SWITCH
	PITCH SWITCH
	ROLL SWITCH
19	ENG FIRE LIGHT
20	TO/LAND CONFIG LIGHT
21	THREAT WARNING PRIME PANEL
22	MASTER CAUTION LIGHT
23	AZIMUTH INDICATOR
24	ANGLE-OF-ATTACK INDEXER
25	COCKPIT TELEVISION SENSOR (CTVS)
26	AIR REFUELING INDICATOR
27	HEAD-UP DISPLAY
28	STANDBY ATTITUDE INDICATOR
29	VERTICAL VELOCITY INDICATOR
30	FUEL FLOW INDICATOR
31	DUAL FC FAIL LIGHT
32	HYD/OIL PRESS LIGHT
33	CANOPY LIGHT
34	RADAR ALT LOW LIGHT
35	CHANNEL FREQUENCY INDICATOR
36	ENGINE OIL PRESSURE INDICATOR
37	RPM PERCENT INDICATOR
38	NOZ POS INDICATOR
39	FTIT INDICATOR
40	FUEL INDICATOR
41	MAGNETIC COMPASS
42	CLOCK
43	FUEL QTY SEL PANEL
44	OXY FLOW INDICATOR
45	HYD PRESS INDICATORS
46	EPU FUEL INDICATOR
47	LIQUID OXYGEN INDICATOR
48	CABIN PRESSURE ALT INDICATOR
49	ILS PANEL
50	VHF RADIO
51	NUCLEAR CONSENT PANEL
52	SEAT ADJ SWITCH

53 LIGHTING PANEL
54 A BLANK PANEL
B TAKE CONTR PANEL
55 AIR COND PANEL
56 SECURE VOICE PANEL
57 CHAFF/FLARE PANEL
58 ANTI-ICE/ANT SEL PANEL
59 UTILITY LIGHT
60 BLANK PANEL
61 OXYGEN REGULATOR PANEL
6 88 BLANK PANEL
89 201 DATA TRANSFER UNIT
63 MAP AND DATA STOWAGE
64 AVIONICS POWER PANEL
65 EXT LIGHTING PANEL
66 SNSR POWER PANEL
67 BUC GND TEST SWITCH
68 B NWS SWITCH
69 BLANK PANEL
70 MASTER ZEROIZE SWITCH
71 SIDE STICK CONTROLLER
CAMERA/GUN SWITCH
WPN REL SWITCH
TRIM SWITCH
DESIG RET SRCH SWITCH
NWS A/R DISC MSL STEP SWITCH
PADDLE SWITCH
72 CAUTION LIGHT PANEL
73 INSTR MODE PANEL
74 ANGLE-OF-ATTACK INDICATOR
75 MRK BCN LIGHT
76 ATTITUDE DIRECTOR INDICATOR
77 HORIZONTAL SITUATION INDICATOR
78 RADAR/EO INDICATOR
79 PEDAL ADJ CONTROL
80 ALTIMETER
81 AIRSPEED/MACH INDICATOR
82 STORES CONTROL PANEL
83 LG HANDLE
84 IFF PANEL
85 RADAR PANEL
86 UHF RADIO PANEL
87 FC/NAV PANEL
88 TCN PANEL
89 BLANK PANEL
90 MANUAL TRIM PANEL
91 ECM PANEL
92 AVTR PANEL
93 ANTI G PANEL
95 ENGINE LIGHT
96 CHAFF/FLARE PROGRAMMER

Figure 00-12. Cockpit General Arrangement. (Sheet 4)



13 20 AFT COCKPIT

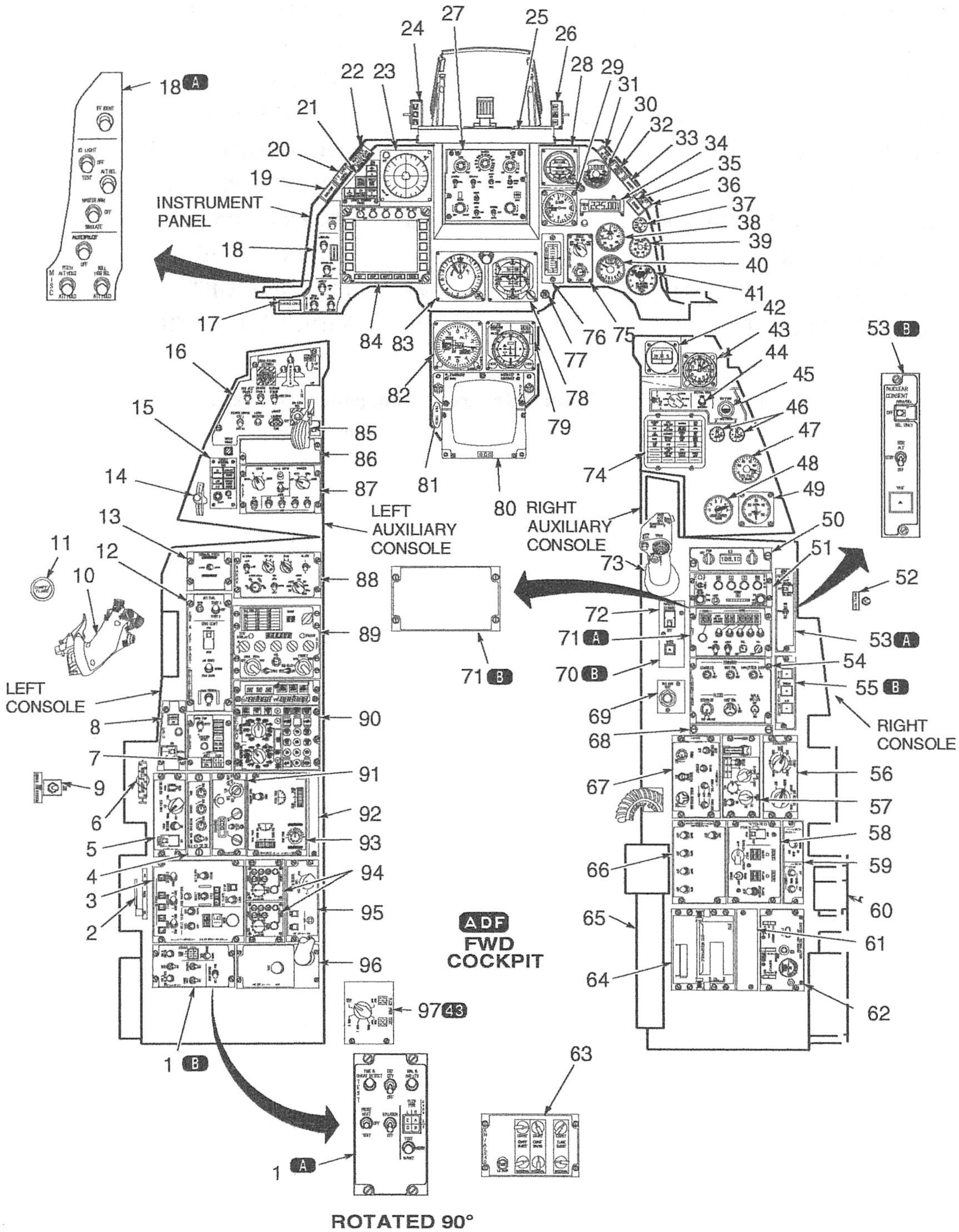
A-00GV-00-1-0008X40

1 TEST PANEL
2 GROWTH PANEL
3 CANOPY JETTISON HANDLE
4 GROWTH PANEL
5 FUEL PANEL
6 GROWTH PANEL
7 MANUAL PITCH SWITCH
8 THROTTLE GRIP
•VHF UHF SWITCH
•MAN RNG/UNCAGE SWITCH
•DOGFIGHT SWITCH
•ANT ELEV SWITCH
•SPD BRK SWITCH
•RDR CURSOR/ENABLE SWITCH
•CUTOFF RELEASE LEVER
•FRICTION CONTROL
9 93 BUC SWITCH
94 ENG CONT SWITCH
10 GROWTH PANEL
11 ALT GEAR HANDLE
12 THREAT WARNING AUX PANEL
13 LANDING GEAR PANEL
•HOOK SWITCH
•WHEELS POSITION LIGHTS
•EMER STORES JETTISON SWITCH
•GND JETT SWITCH
•BRAKES SWITCH
•BRAKES SELECTOR SWITCH
•LG HANDLE
•DN LOCK REL BUTTON
•LIGHTS SWITCH
•HORN SILENCER SWITCH
•ALT FLAPS SWITCH
•LE FLAP POSITION INDICATOR
•SPEED BRAKE INDICATOR
•STORES CONFIG SWITCH
•DOWN PERMISSION SWITCH
14 RADIO CALL
15 AFT ARMAMENT CONSENT PANEL
16 RIT INDICATOR
17 SIDE STICK SELECTOR INDICATOR
18 OVRD SWITCH

19 AZIMUTH INDICATOR
20 THREAT WARNING PRIME PANEL
21 STORES CONTROL PANEL
22 ENG FIRE LIGHT
23 TO/LAND CONFIG LIGHT
24 ANGLE-OF-ATTACK INDEXER
25 AIR REFUELING INDICATOR
26 MASTER CAUTION LIGHT
27 RADAR/EO INDICATOR
28 DUAL FC FAIL LIGHT
29 HYD/OIL PRESS LIGHT
30 CANOPY LIGHT
31 RADAR ALT LOW LIGHT
32 STANDBY ATTITUDE INDICATOR
33 ENGINE OIL PRESSURE INDICATOR
34 FUEL FLOW INDICATOR
35 MRK BCN LIGHT
36 RPM PERCENT INDICATOR
37 NOZ POS INDICATOR
38 FTIT INDICATOR
39 FUEL INDICATOR
40 OXY FLOW INDICATOR
41 HYD PRESS INDICATORS
42 EJECTION MODE SEL PANEL
43 SEAT ADJ SWITCH
44 SUIT PRESSURE SWITCH
45 VHF RADIO
46 LIGHTING PANEL
47 11 GROWTH PANEL
12 CHAFF/FLARE PROGRAMMER
48 DSPL POWER PANEL
49 OXYGEN REGULATOR PANEL
50 UTILITY LIGHT
51 RELIEF/MISC STOWAGE
52 NWS SWITCH
53 SIDE STICK CONTROLLER
•CAMERA/GUN SWITCH
•WPN REL SWITCH
•TRIM SWITCH
•DESIG RET SRCH SWITCH
•NWS A/R DISC MSL STEP SWITCH
•PADDLE SWITCH

54	CAUTION LIGHT PANEL	66	LG HANDLE
55	CLOCK	67	GROWTH PANEL
56	ANGLE-OF-ATTACK INDICATOR	68	RADIO SELECT PANEL
57	VERTICAL VELOCITY INDICATOR	69	ILS PANEL
58	ATTITUDE DIRECTOR INDICATOR	70	TCN PANEL
59	HORIZONTAL SITUATION INDICATOR	71	GROWTH PANEL
60	PEDAL ADJ CONTROL	72	UHF RADIO PANEL
61	ALTIMETER	73	GROWTH PANEL
62	AIRSPEED/MACH INDICATOR	74	GROWTH PANEL
63	ACCELEROMETER	75	ANTI G PANEL
64	CHANNEL FREQUENCY INDICATOR	76	ENGINE LIGHT
65	INSTR MODE SELECT	77	VIDEO SEL SWITCH

Figure 00-12. Cockpit General Arrangement. (Sheet 5)



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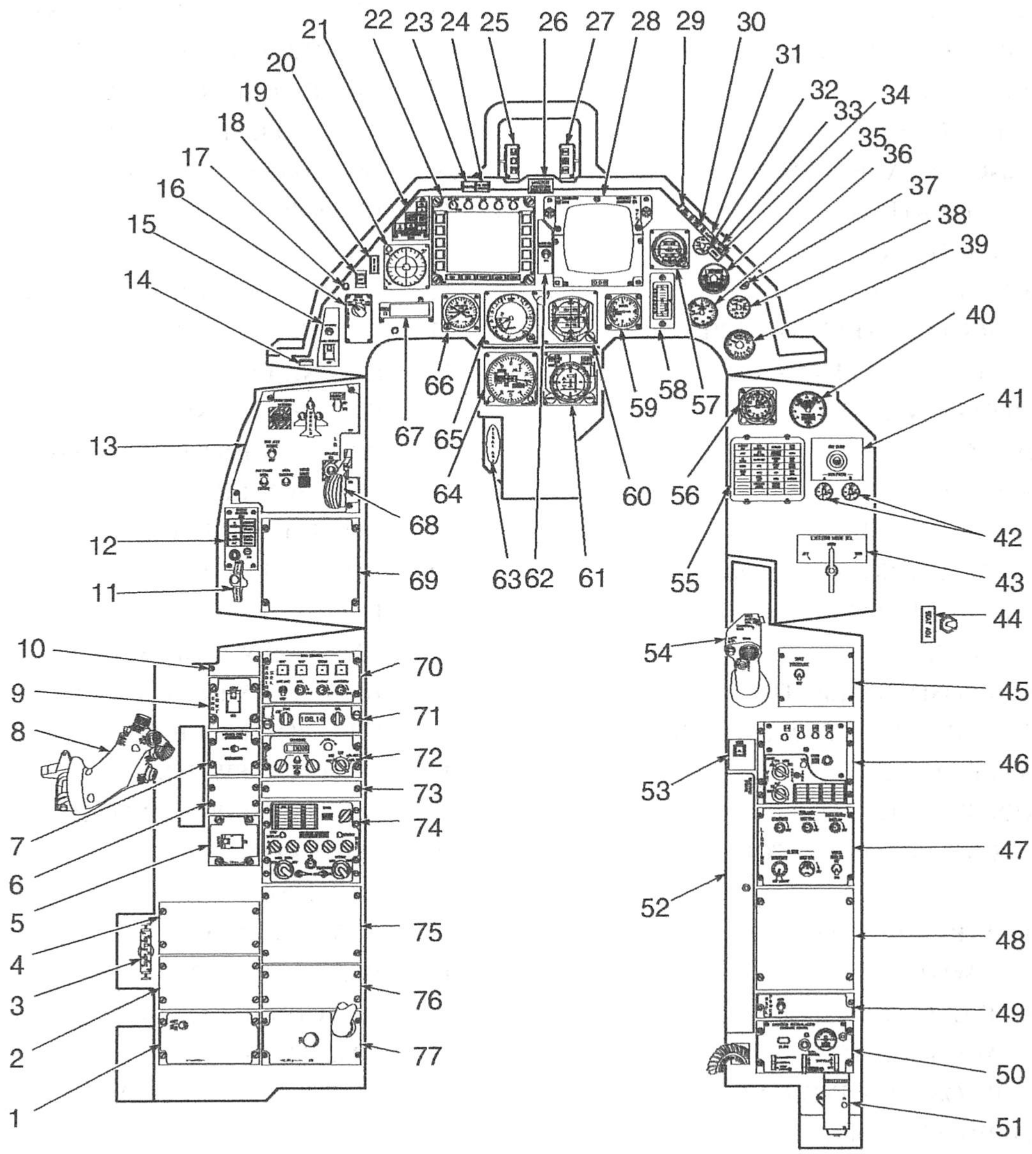
1	TEST PANEL
2	DEFOG LEVER
3	FLIGHT CONTROL PANEL
4	COMM PANEL
5	FUEL PANEL
6	CANOPY JETTISON HANDLE
7	ELEC PANEL
8	EPU PANEL
9	REDUCED IDLE THRUST SWITCH
10	THROTTLE GRIP
	•VHF/HF/UHF SWITCH
	•MAN RNG/UNCAGE SWITCH
	•DOGFIGHT SWITCH
	•ANT ELEV SWITCH
	•SPD BRK SWITCH
	•RDR CURSOR/ENABLE SWITCH
	•CUTOFF RELEASE LEVER
	•FRICTION CONTROL
11	CHAFF/FLARE SWITCH
12	ENG & JET START PANEL
13	MANUAL PITCH SWITCH
14	ALT GEAR HANDLE
15	THREAT WARNING AUX PANEL
16	LANDING GEAR PANEL
	•HOOK SWITCH
	•WHEELS POSITION LIGHTS
	•EMER STORES JETTISON SWITCH
	•GND JETT SWITCH
	•BRAKES SWITCH
	•BRAKES SELECTOR SWITCH
	•LG HANDLE
	•DN LOCK REL BUTTON
	•LIGHTS SWITCH
	•HORN SILENCER SWITCH
	•ALT FLAPS SWITCH
	•LE FLAP POSITION INDICATOR
	•SPEED BRAKE INDICATOR
	•STORES CONFIG SWITCH
	•DOWN PERMISSION SWITCH
17	RADIO CALL
18	MISC PANEL
	•IFF IDENT SWITCH
	•A ALT REL SWITCH
	•B OVRD LIGHT
	•MASTER ARM SWITCH
	•AUTOPILOT SWITCH
	•PITCH SWITCH
	•ROLL SWITCH
19	ENG FIRE LIGHT
20	TO/LAND CONFIG LIGHT
21	THREAT WARNING PRIME PANEL
22	MASTER CAUTION LIGHT
23	AZIMUTH INDICATOR
24	ANGLE-OF-ATTACK INDEXER
25	COCKPIT TELEVISION SENSOR (CTVS)
26	AIR REFUELING INDICATOR
27	HEAD-UP DISPLAY
28	STANDBY ATTITUDE INDICATOR
29	VERTICAL VELOCITY INDICATOR
30	FUEL FLOW INDICATOR
31	DUAL FC FAIL LIGHT
32	HYD/OIL PRESS LIGHT
33	CANOPY LIGHT
34	CHANNEL FREQUENCY INDICATOR
35	ENGINE LIGHT
36	RADAR ALT LOW LIGHT
37	ENGINE OIL PRESSURE INDICATOR
38	RPM PERCENT INDICATOR
39	NOZ POS INDICATOR
40	FTIT INDICATOR
41	FUEL INDICATOR
42	MAGNETIC COMPASS
43	CLOCK
44	FUEL QTY SEL PANEL
45	OXY FLOW INDICATOR
46	HYD PRESS INDICATORS
47	EPU FUEL INDICATOR
48	LIQUID OXYGEN INDICATOR
49	CABIN PRESSURE ALT INDICATOR
50	ILS PANEL
51	VHF RADIO
52	SEAT ADJ SWITCH
53	NUCLEAR CONSENT PANEL
54	LIGHTING PANEL

55	Ⓐ BLANK PANEL
	Ⓑ TAKE CONTR PANEL
56	AIR COND PANEL
57	SECURE VOICE PANEL
58	CHAFF/FLARE PANEL
59	ANTI-ICE/ANT SEL PANEL
60	UTILITY LIGHT
61	BLANK PANEL
62	OXYGEN REGULATOR PANEL
63	CHAFF/FLARE PROGRAMMER
64	DATA TRANSFER UNIT PANEL
65	MAP AND DATA STOWAGE
66	AVIONICS POWER PANEL
67	EXT LIGHTING PANEL
68	BLANK PANEL
69	BUC GND TEST SWITCH
70	Ⓑ NWS SWITCH
71	Ⓐ HF RADIO
	Ⓑ BLANK PANEL
72	MASTER ZEROIZE SWITCH
73	SIDE STICK CONTROLLER
	•CAMERA/GUN SWITCH
	•WPN REL SWITCH
	•TRIM SWITCH
	•DESIG RET SRCH SWITCH
	•NWS A/R DISC MSL STEP SWITCH
	•PADDLE SWITCH
74	CAUTION LIGHT PANEL
75	INSTR MODE PANEL
76	ANGLE-OF-ATTACK INDICATOR
77	MRK BCN LIGHT
78	ATTITUDE DIRECTOR INDICATOR
79	HORIZONTAL SITUATION INDICATOR
80	RADAR/EO INDICATOR
81	PEDAL ADJ CONTROL
82	ALTIMETER
83	AIRSPEED/MACH INDICATOR
84	STORES CONTROL PANEL
85	LG HANDLE
86	BLANK PANEL
87	AIFF PANEL
88	RADAR PANEL
89	UHF RADIO PANEL
90	FC/NAV PANEL
91	TCN PANEL
92	BLANK PANEL
93	MANUAL TRIM PANEL
94	ECM PANEL
95	AVTR PANEL
96	ANTI G PANEL

Figure 00-12. Cockpit General Arrangement. (Sheet 6)



ADF AFT COCKPIT

A-00GV-00-1-0010X40

1 TEST PANEL
2 BLANK PANEL
3 CANOPY JETTISON HANDLE
4 BLANK PANEL
5 FUEL PANEL
6 BLANK PANEL
7 MANUAL PITCH SWITCH
8 THROTTLE GRIP
•VHF UHF SWITCH
•MAN RNG/UNCAGE SWITCH
•DOGFIGHT SWITCH
•ANT ELEV SWITCH
•SPD BRK SWITCH
•RDR CURSOR/ENABLE SWITCH
•CUTOFF RELEASE LEVER
•FRICTION CONTROL
9 BUC SWITCH
10 BLANK PANEL
11 ALT GEAR HANDLE
12 THREAT WARNING AUX PANEL
13 LANDING GEAR PANEL
•HOOK SWITCH
•WHEELS POSITION LIGHTS
•EMER STORES JETTISON SWITCH
•GND JETT SWITCH
•BRAKES SWITCH
•BRAKES SELECTOR SWITCH
•LG HANDLE
•DN LOCK REL BUTTON
•LIGHTS SWITCH
•HORN SILENCER SWITCH
•ALT FLAPS SWITCH
•LE FLAP POSITION INDICATOR
•SPEED BRAKE INDICATOR
•STORES CONFIG SWITCH
•DOWN PERMISSION SWITCH
14 RADIO CALL
15 AFT ARMAMENT CONSENT PANEL
16 INSTR MODE SELECT
17 RIT INDICATOR
18 SIDE STICK SELECTOR INDICATOR
19 OVRD SWITCH
20 AZIMUTH INDICATOR
21 THREAT WARNING PRIME PANEL
22 STORES CONTROL PANEL
23 ENG FIRE LIGHT
24 TO/LAND CONFIG LIGHT
25 ANGLE-OF-ATTACK INDEXER
26 MASTER CAUTION LIGHT
27 AIR REFUELING INDICATOR
28 RADAR/EO INDICATOR
29 DUAL FC FAIL LIGHT
30 HYD/OIL PRESS LIGHT
31 CANOPY LIGHT
32 ENGINE OIL PRESSURE INDICATOR
33 RADAR ALT LOW LIGHT
34 ENGINE LIGHT
35 FUEL FLOW INDICATOR
36 RPM PERCENT INDICATOR
37 MRK BCN LIGHT
38 NOZ POS INDICATOR
39 FTIT INDICATOR
40 FUEL INDICATOR
41 OXY FLOW INDICATOR
42 HYD PRESS INDICATORS
43 EJECTION MODE SEL PANEL
44 SEAT ADJ SWITCH
45 SUIT PRESSURE SWITCH
46 VHF RADIO
47 LIGHTING PANEL
48 BLANK PANEL
49 DSPL POWER PANEL
50 OXYGEN REGULATOR PANEL
51 UTILITY LIGHT
52 RELIEF/MISC STOWAGE
53 NWS SWITCH
54 SIDE STICK CONTROLLER
•CAMERA/GUN SWITCH
•WPN REL SWITCH
•TRIM SWITCH
•DESIG RET SRCH SWITCH
•NWS A/R DISC MSL STEP SWITCH
•PADDLE SWITCH
55 CAUTION LIGHT PANEL

56	CLOCK	67	CHANNEL FREQUENCY INDICATOR
57	STANDBY ATTITUDE INDICATOR	68	LG HANDLE
58	ANGLE-OF-ATTACK INDICATOR	69	BLANK PANEL
59	VERTICAL VELOCITY INDICATOR	70	RADIO SEL PANEL
60	ATTITUDE DIRECTOR INDICATOR	71	ILS PANEL
61	HORIZONTAL SITUATION INDICATOR	72	TCN PANEL
62	VIDEO SEL SWITCH	73	BLANK PANEL
63	PEDAL ADJ CONTROL	74	UHF RADIO PANEL
64	ALTIMETER	75	BLANK PANEL
65	AIRSPEED/MACH INDICATOR	76	BLANK PANEL
66	ACCELEROMETER	77	ANTI G PANEL

Figure 00-12. Cockpit General Arrangement. (Sheet 7)

00.5 AIR-CONDITIONING SYSTEM (21-00).

The air-conditioning (environmental control) system provides a shirt sleeve cockpit environment. Bleed air from the engine is conditioned by the air cycle system and distributed at proper temperature, pressure, and flow to provide the following:

a. Cockpit temperature control
b. Electronic equipment cooling
c. Cabin pressurization, ventilation, and defog
d. Fuel tank pressurization
e. Radar pressurization
f. Canopy seal and anti-g suit pressurization
g. Servo air for operation of pneumatic valves
h. Ram air for ventilation and cooling of the cockpit and electronic equipment in the event of normal air-conditioning failure.

The cockpit controls and indicators for the air-conditioning system are shown in Figure 00-13 and ventilation airflow is shown in Figure 00-14. The air-conditioning system consists of the following subsystems:

a. Compression/Bleed Air (21-10)
b. Distribution (21-20)
c. Pressurization Control (21-30)
d. Cooling (21-50)
e. Temperature Control (21-60)

00.5.1 Compression/Bleed Air (21-10). Compression/bleed air provides regulated air for air conditioning, servo control, and pressurization functions.

00.5.2 Distribution (21-20). Distribution routes dehumidified and filtered air to the cockpit and to the defog outlets. Distribution also routes air to the avionics equipment and provides for ground checkout of the refrigeration package without starting the engine. A pneumatic ground service connector valve is located in the left wheel well. The valve incorporates a dual check valve to prevent discharge of engine bleed air.

00.5.3 Pressurization Control (21-30). Pressurization control provides regulated air for cabin ventilation and for the pressurization of canopy seal, anti-g suit, fuel tank, and radar.

00.5.4 Cooling (21-50). Cooling provides dehumidified refrigerated air for cockpit and electronic equipment temperature control.

00.5.5 Temperature Control (21-60). Temperature control is the portion of the air-conditioning system that controls cockpit temperature.

00.6 COMMUNICATIONS SYSTEM (GENERAL) (23-00).

The communications systems provide normal and secure mode air-to-air and air-to-ground communications and mixing of onboard tones and navigation identification signals. An intercommunication link between the cockpit and ground maintenance personnel is also provided. The systems consist of an ADF A AN/ARC-200 HF radio system, an AN/ARC-164 UHF radio system, an AN/ARC-186 VHF radio system, an AN/AIC-18 interphone (intercommunications) system, and, when installed, a secure voice system. A Channel Frequency Indicator (CFI), located on the instrument panel, provides a head-up radio channel selection display. 19 The CFI displays the UHF radio channel selection and also provides an in-

dication of which radio (UHF or VHF) is in operation. 20 The CFI displays the UHF or VHF radio channel selection. The communications systems controls and indicators are shown in Figure 00-15, and the antenna locations are shown in Figure 00-17. The equipment locations are shown in Figure 00-16. The communications system consists of the following subsystems:

a. ADF A AN/ARC-200 HF radio system
b. AN/ARC-164 UHF radio system
c. AN/ARC-186 VHF radio system
d. AN/AIC-18 Interphone (intercommunications) system
e. Secure voice system (when installed)

00.6.1 ADF A AN/ARC-200 HF Radio (23-10). The AN/ARC-200 HF radio system provides for longer distance (over the horizon) communications between air-to-air and air-to-ground stations equipped with a similar system. The HF radio system operates in the frequency band of 2 to 29.999 mHz in 100 Hz increments. Any one of 20 preset channels may be selected, or the channel frequency may be selected manually. The system is controlled by a control panel located on the right console and the transmit switch located on the throttle grip. The system consists of a receiver/transmitter, a control panel, an antenna coupler, a feedline, and an antenna.

00.6.2 AN/ARC-164 UHF Radio (23-20). The AN/ARC-164 UHF radio provides air-to-air and air-to-ground communications in the ultrahigh frequency band of 225 to 400 mHz. Any of 7000 channel frequencies may be selected. The UHF radio is a panel-mounted unit located in the pilot's left console. UHF radios modified to HAVE QUICK (HQ) configurations have antijamming capabilities and limited channel selection when in antijam mode.

00.6.3 VHF Radio (23-30). The AN/ARC-186 radio provides transceiver voice communication in the VHF AM and FM bands, 20 presettable frequencies, and serial digital data control, which allows control from a remote location and compatibility with the channel frequency indicator. The antenna for the VHF/AM-FM radio is located at the top of the vertical stabilizer leading edge. 19 The VHF radio is a panel-mounted unit located in the pilot's right console. 20 A The receiver/transmitter is located on left strake door 2101. The control panel is mounted in the pilot's right console. 20 B The VHF radio control is mounted in the aft right console.

00.6.4 AN/AIC-18 Intercommunication System (23-40). The AN/AIC-18 intercommunication system provides amplification of microphone and headset signals, selections of transmitters, and mixing and selection of onboard audio signals. The audio information inputs to the intercommunication system include UHF, VHF, and ADF A HF communications, TACAN, ILS, 13 A-G/IFF or ADF AIFF, radar homing and warning, missile tone, stall warning tone, landing gear warning tone, voice caution/warning/voice message, and landing gear warning tone. The system provides a connection point for intercommunication between the pilot and ground personnel and also has provisions for intercommunications with tanker aircraft during air refueling operations. Interphone communications between the cockpit(s) and ground is accomplished by use of an interphone cord and headset (H-133C/AIC) (Figure 00-15 (Sheet 2)). The ground interphone cord is connected under access door 19 2306 or 20 2318.

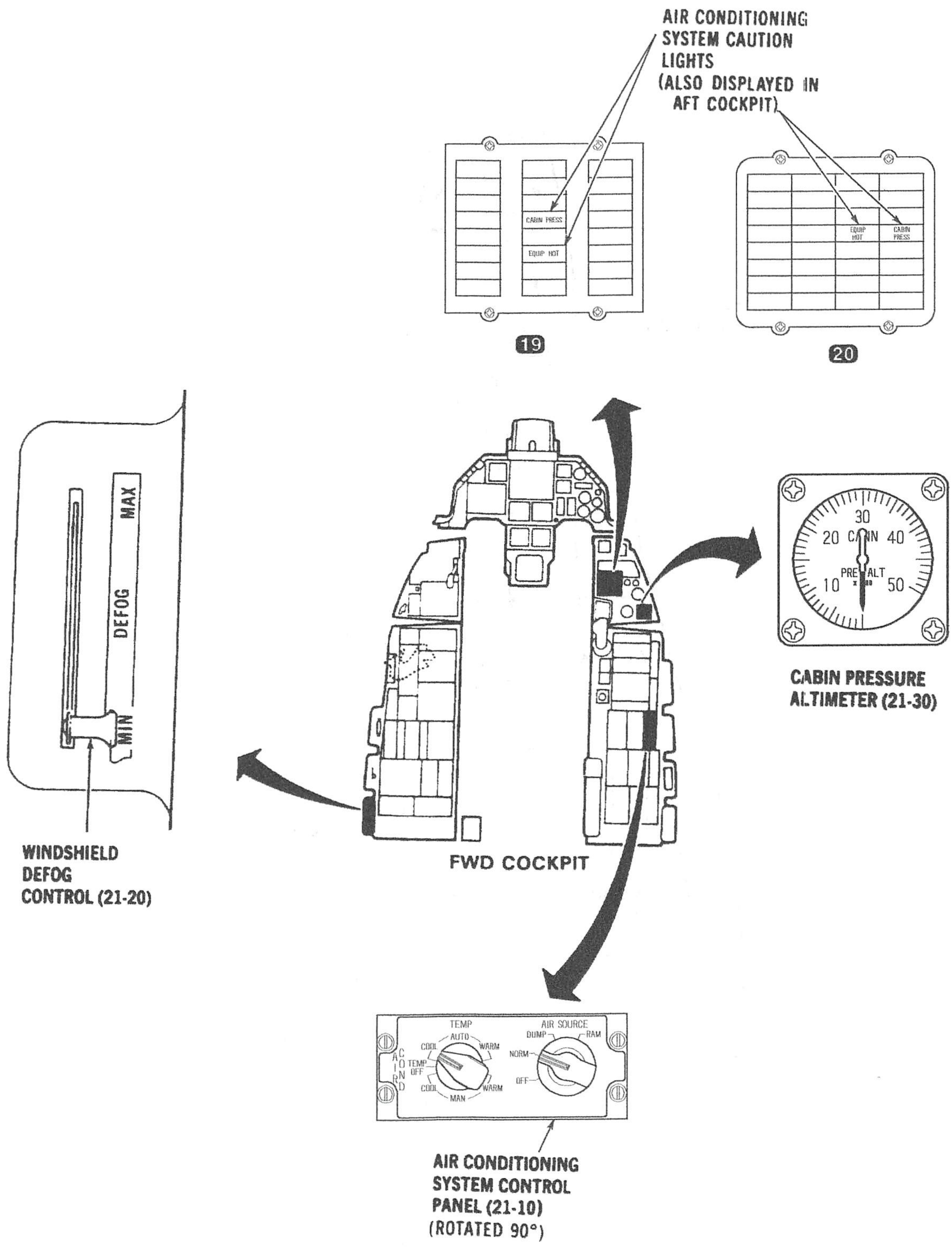


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Figure 00-13. Air Conditioning System Controls and Indicators.

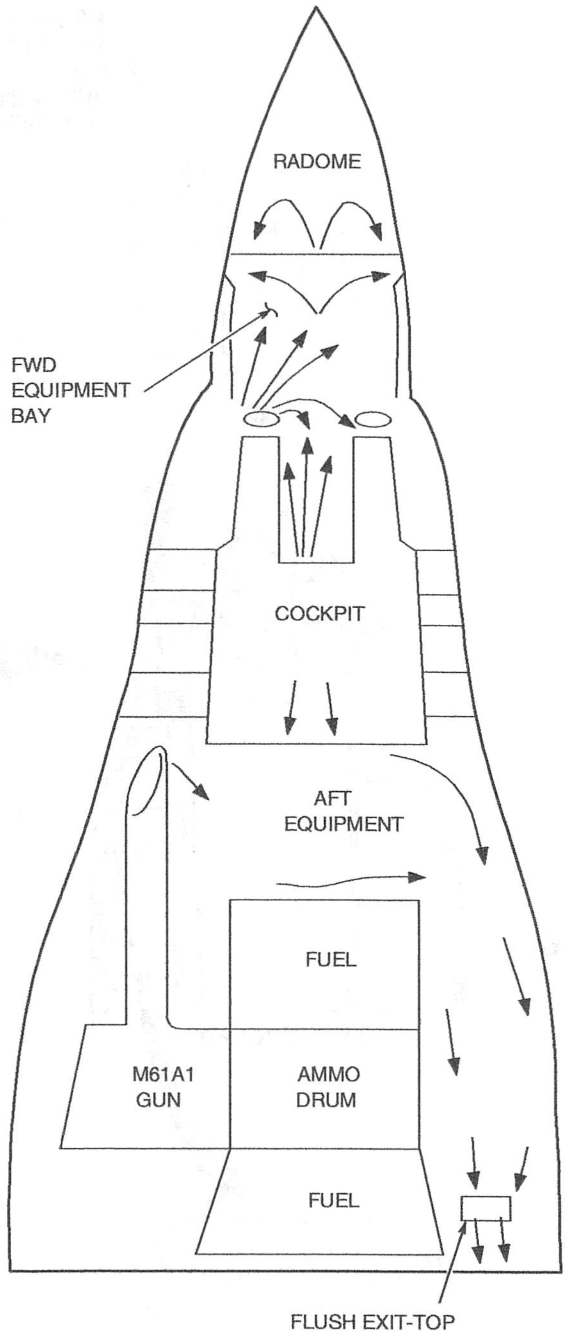

Figure 00-14. Ventilation Airflow.

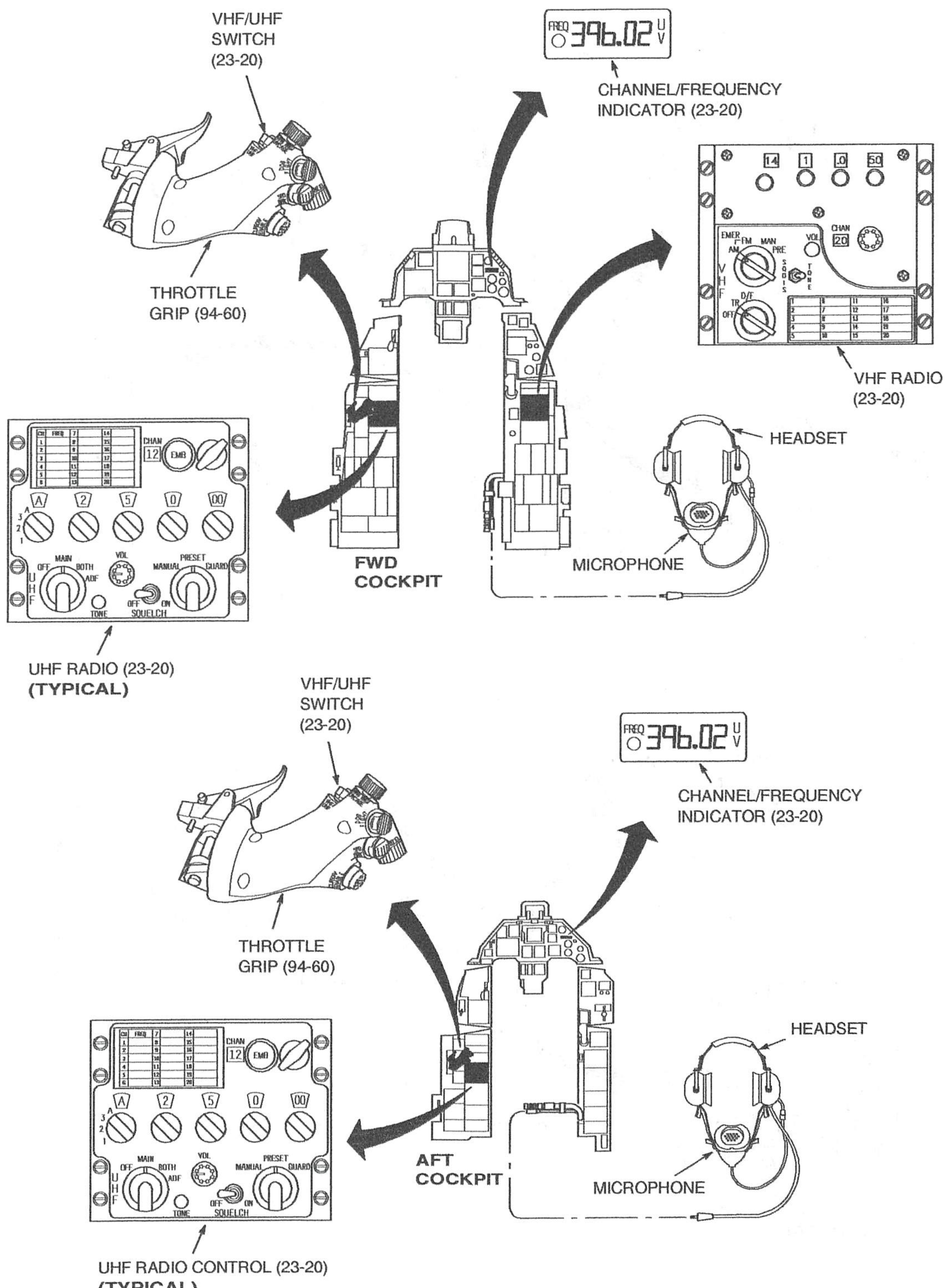

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Figure 00-15. Communications System Cockpit Controls and Indicators. (Sheet 1 of 5)

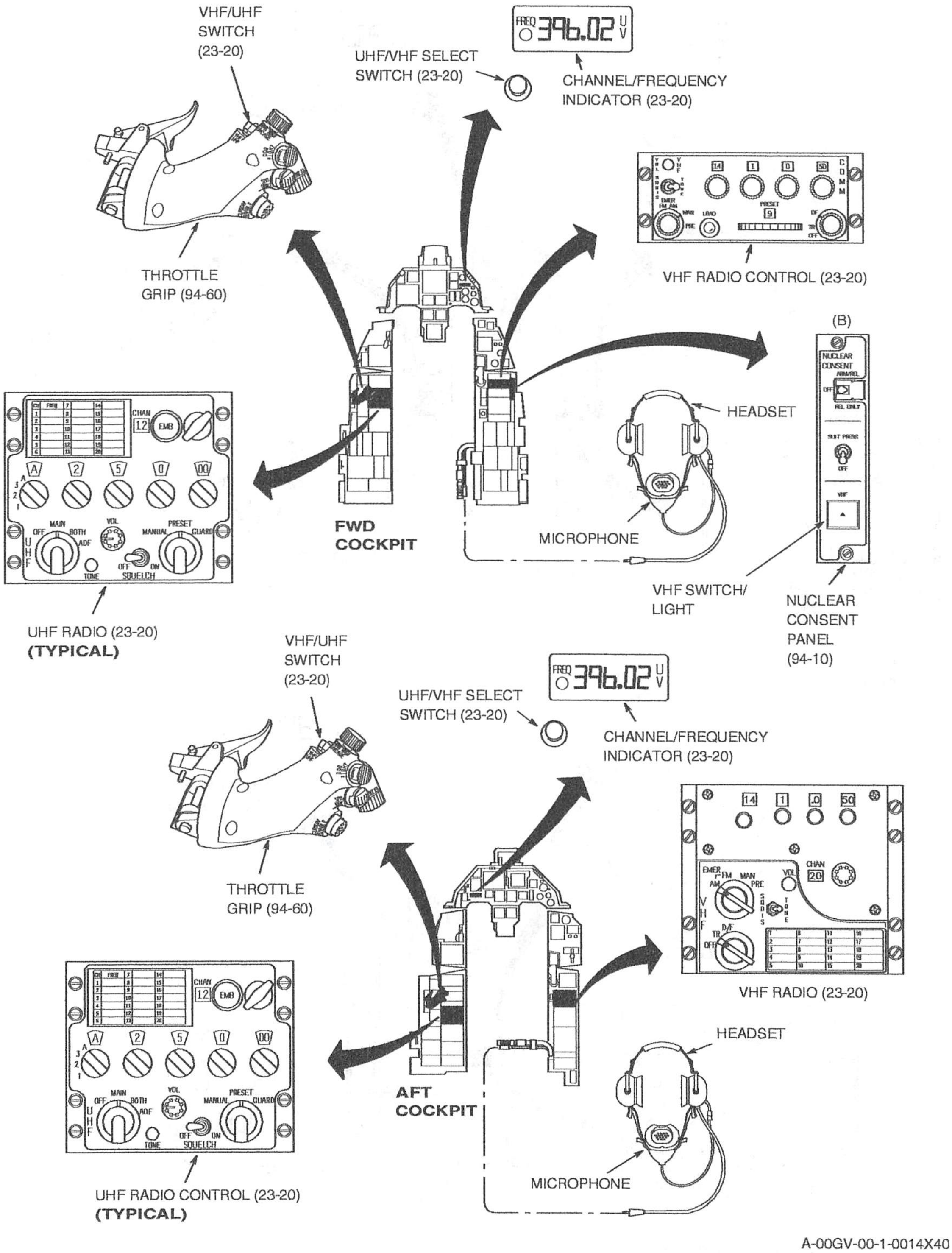

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Figure 00-15. Communications System Cockpit Controls and Indicators. (Sheet 2)

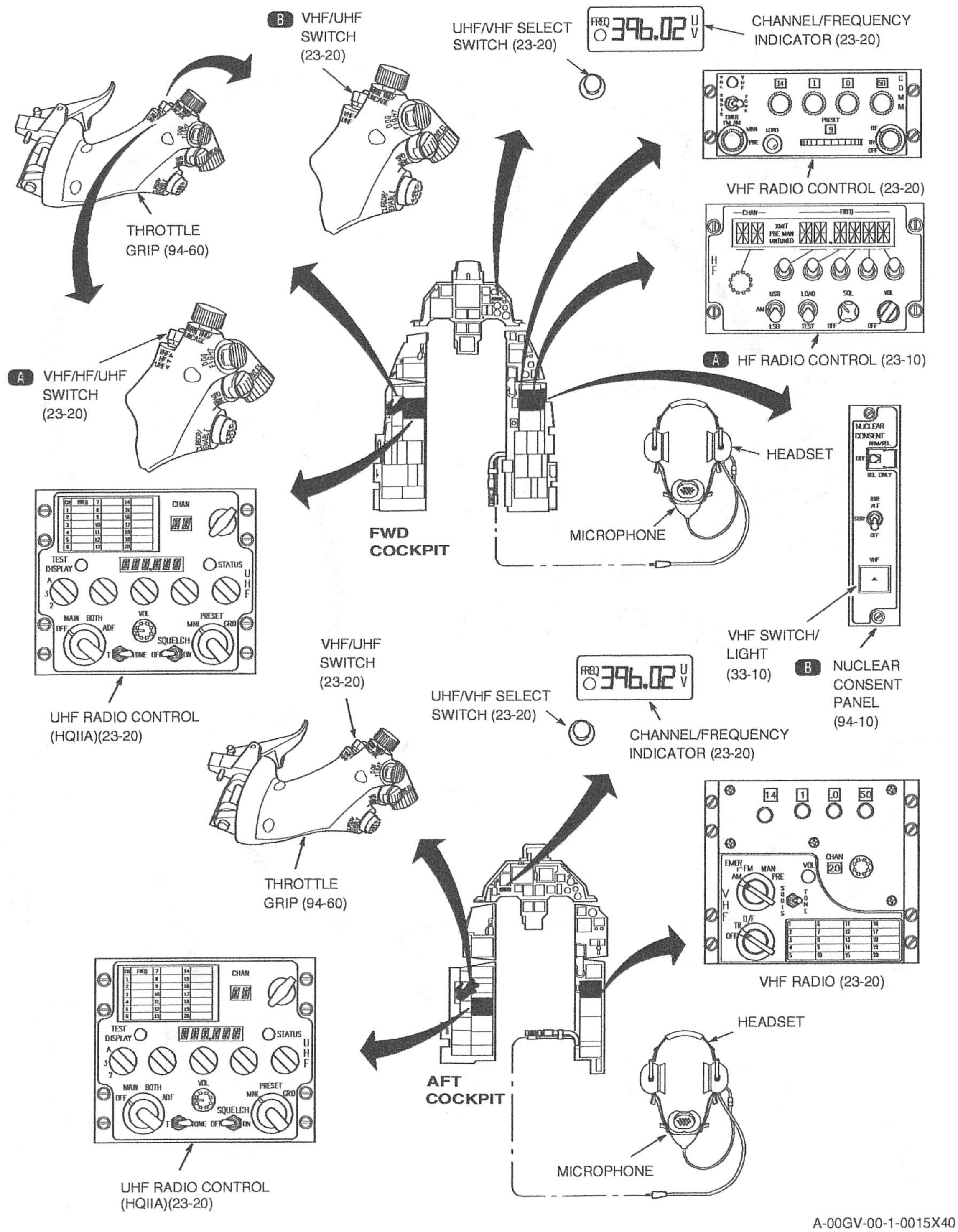

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Figure 00-15. Communications System Cockpit Controls and Indicators. (Sheet 3)

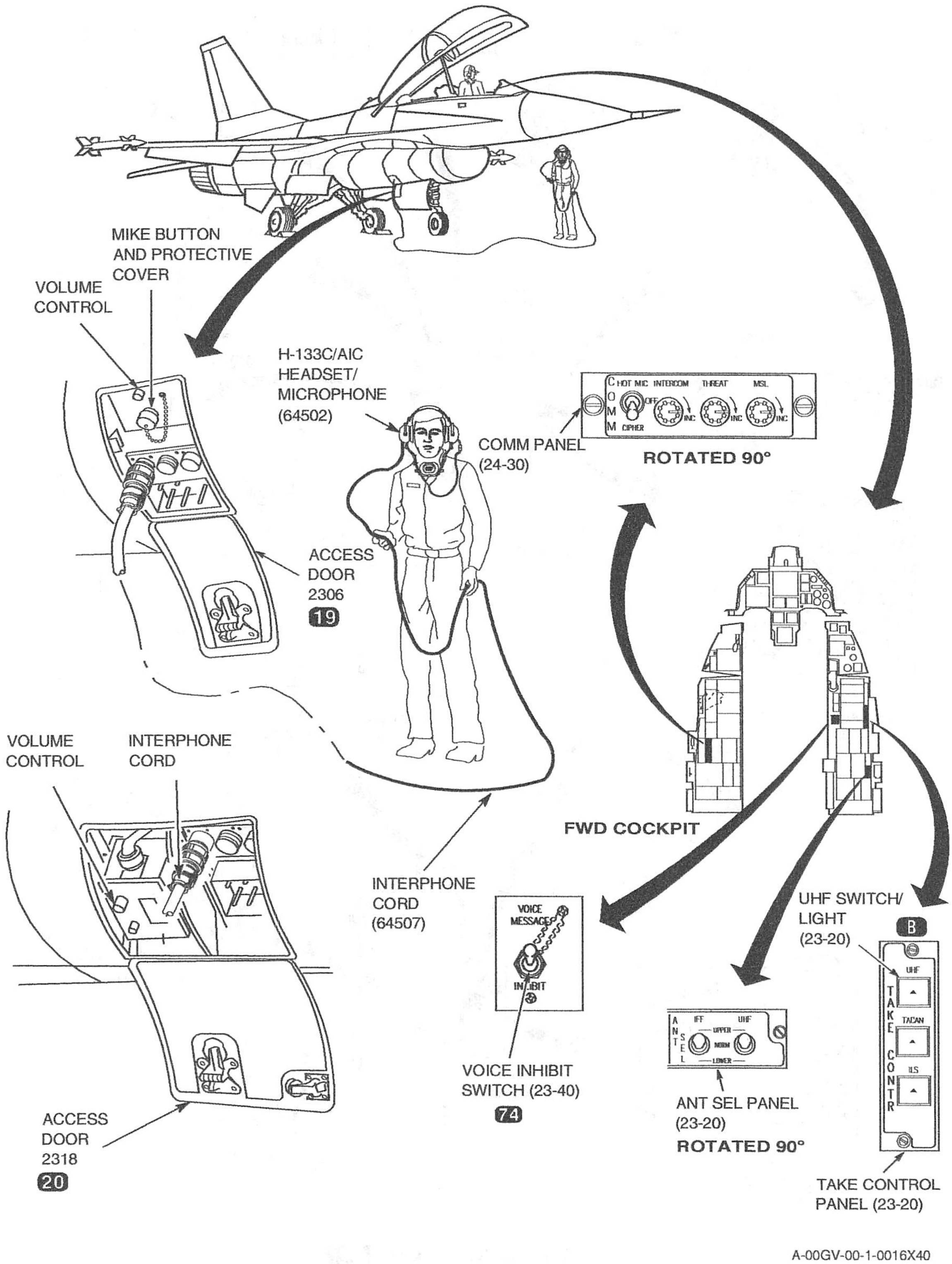

Figure 00-15. Communications System Cockpit Controls and Indicators. (Sheet 4)

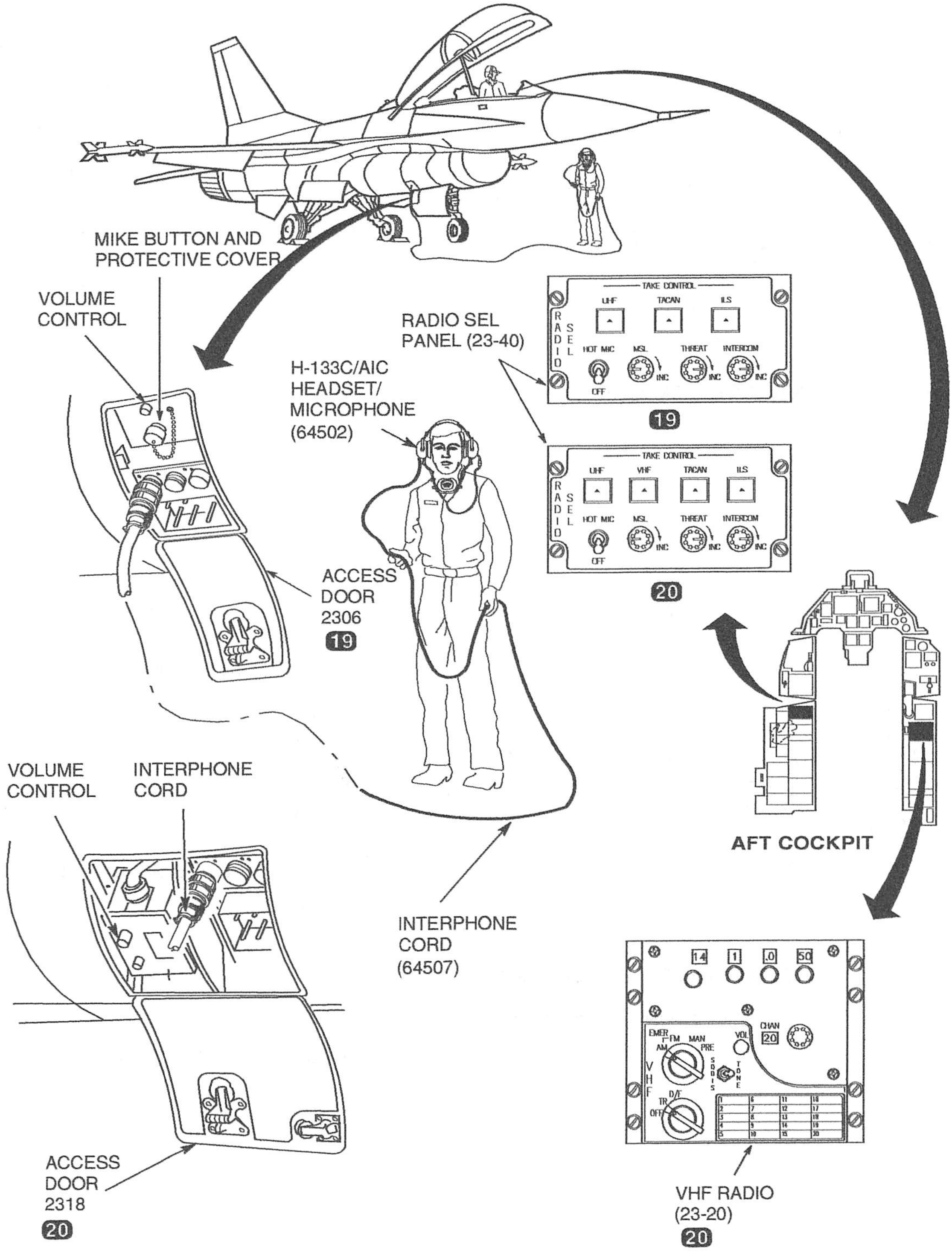

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Figure 00-15. Communications System Cockpit Controls and Indicators. (Sheet 5)

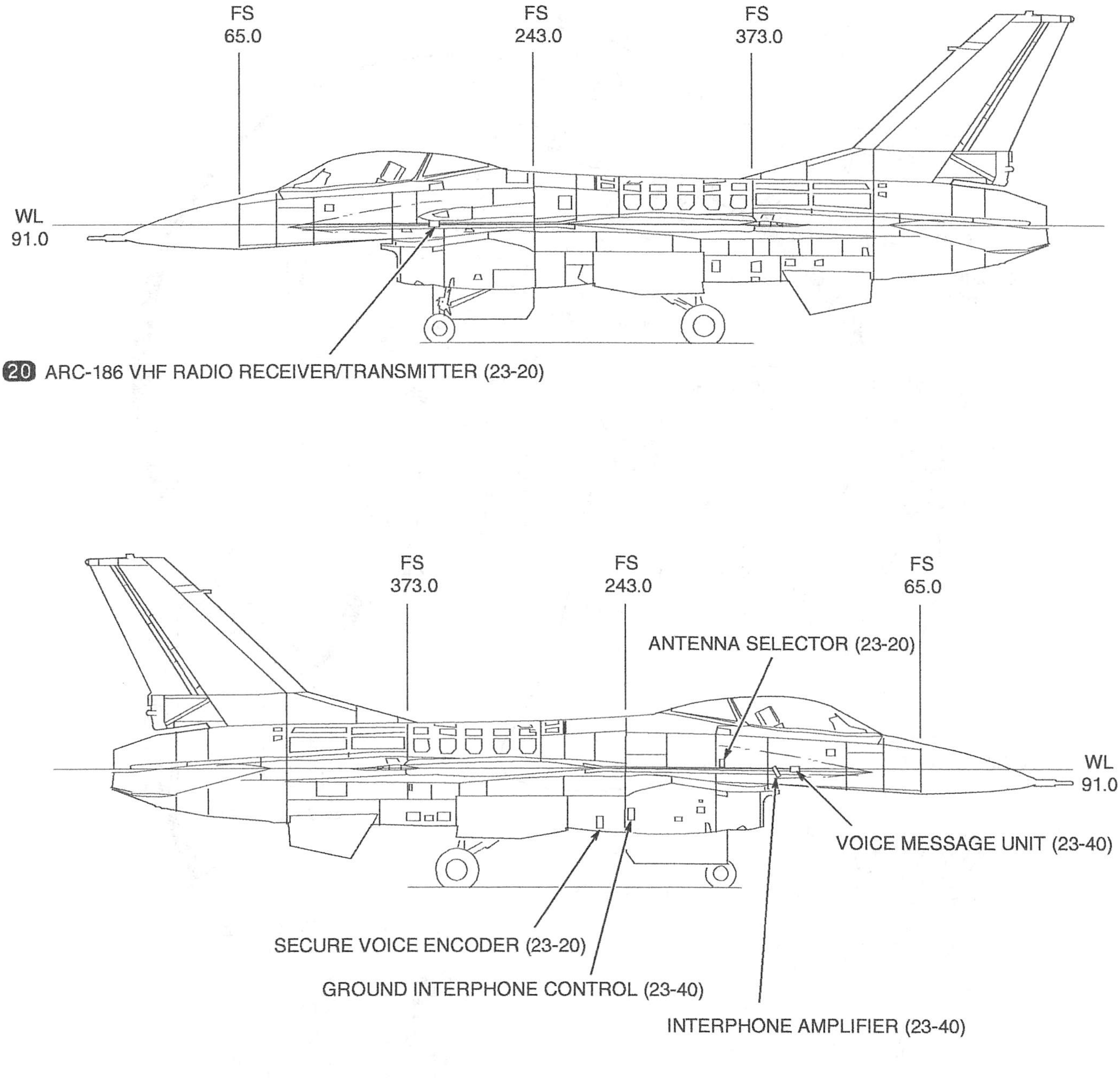
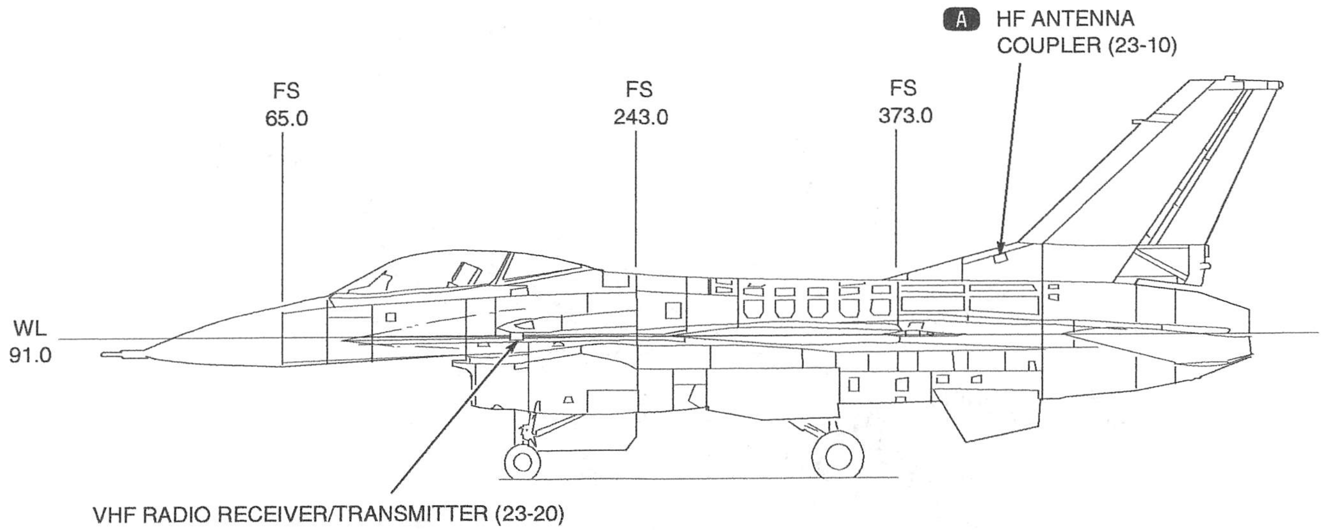


Figure 00-16. Communications System Components Location. (Sheet 1 of 2)



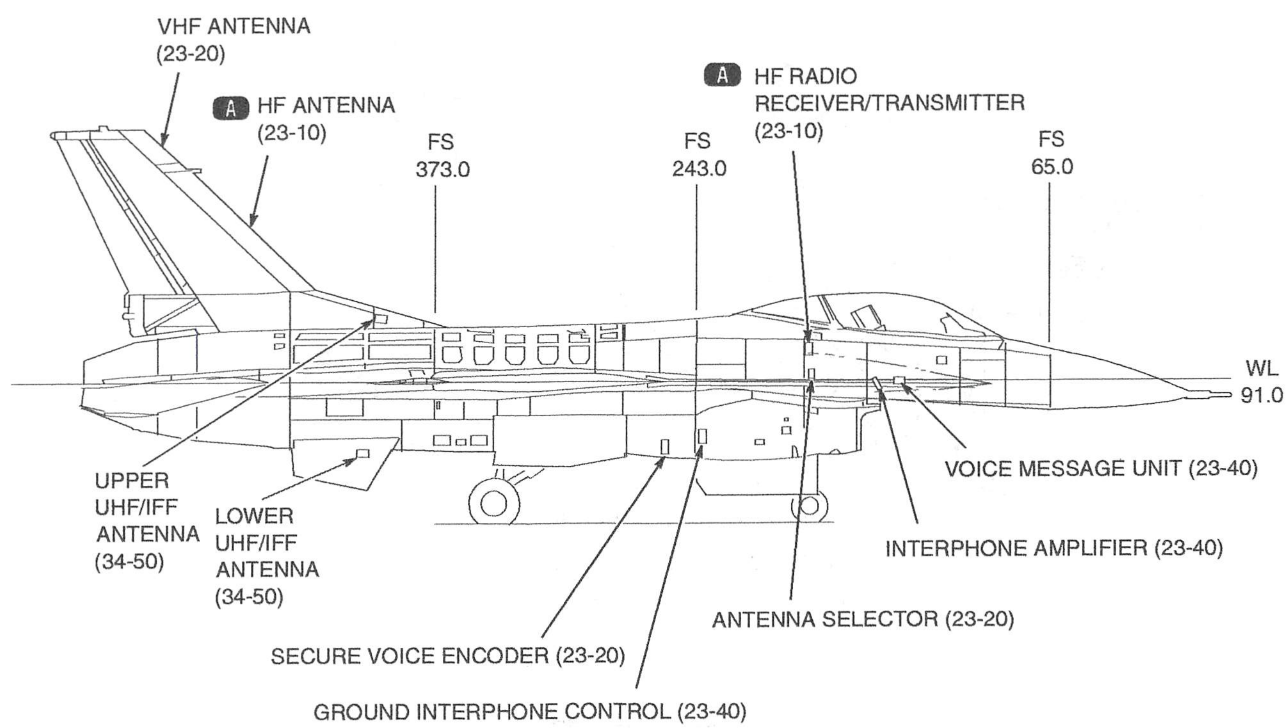


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Figure 00-16. Communications System Components Location. (Sheet 2)

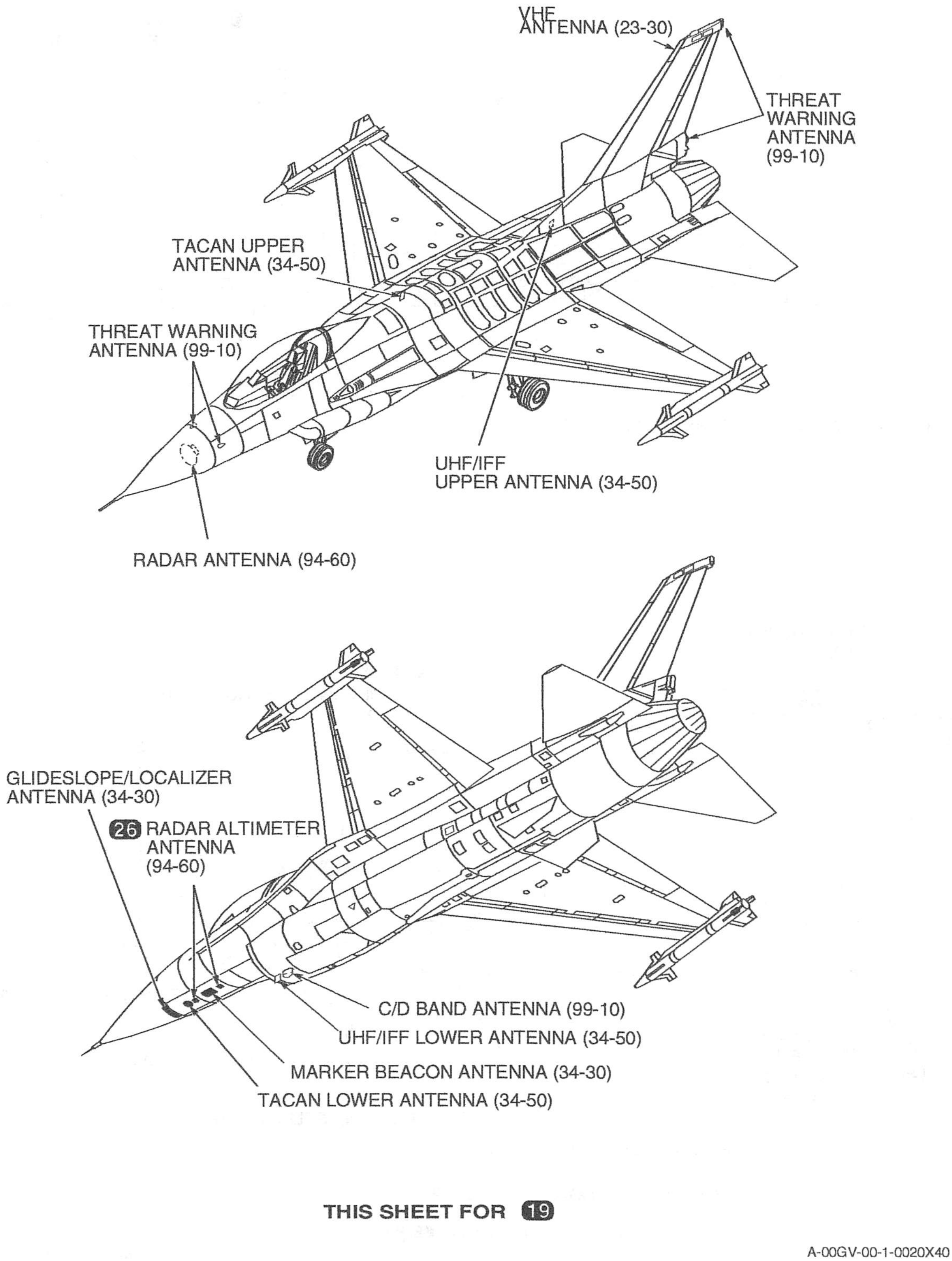

Figure 00-17. Antenna Locations. (Sheet 1 of 3)

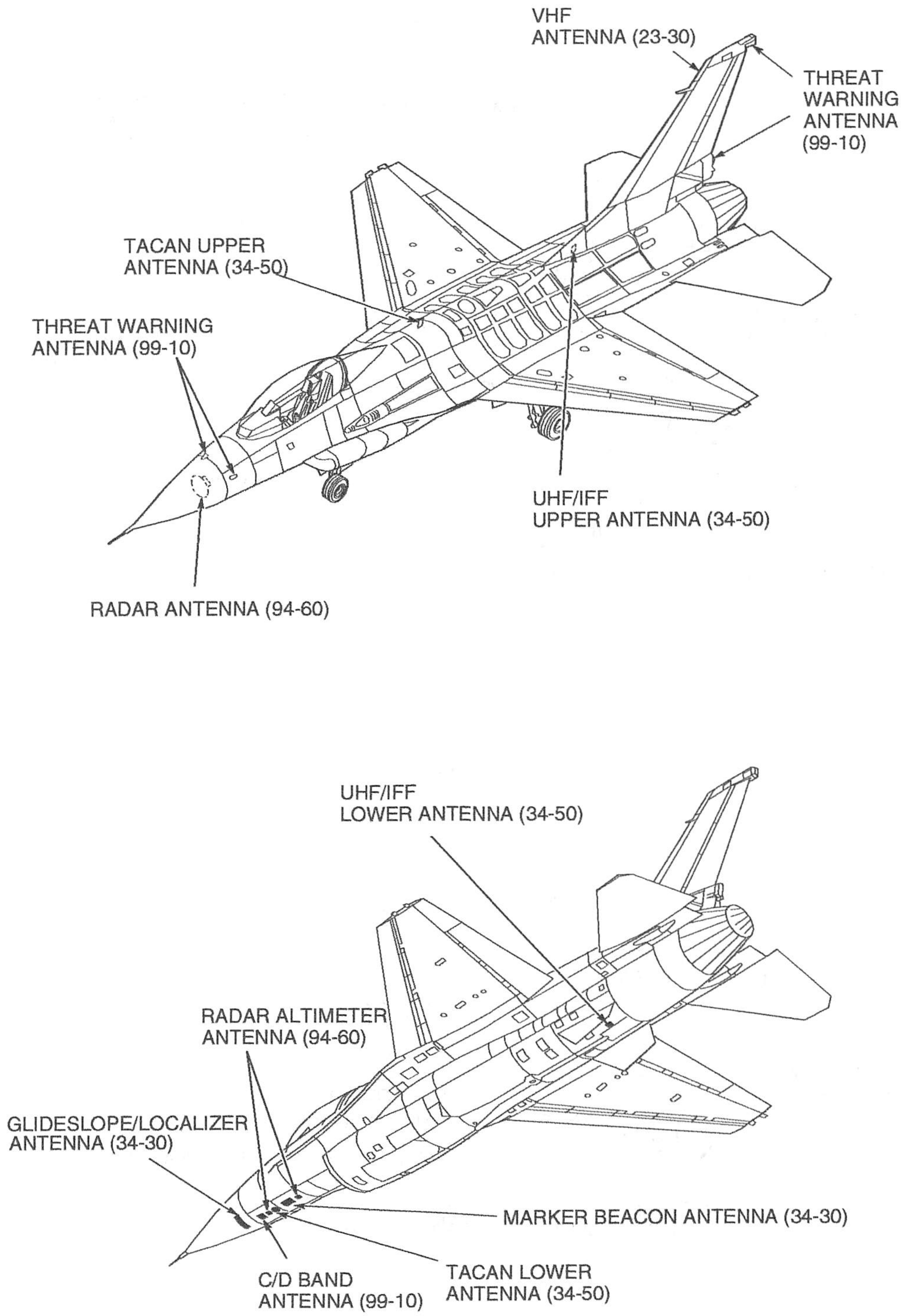

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Figure 00-17. Antenna Locations. (Sheet 2)

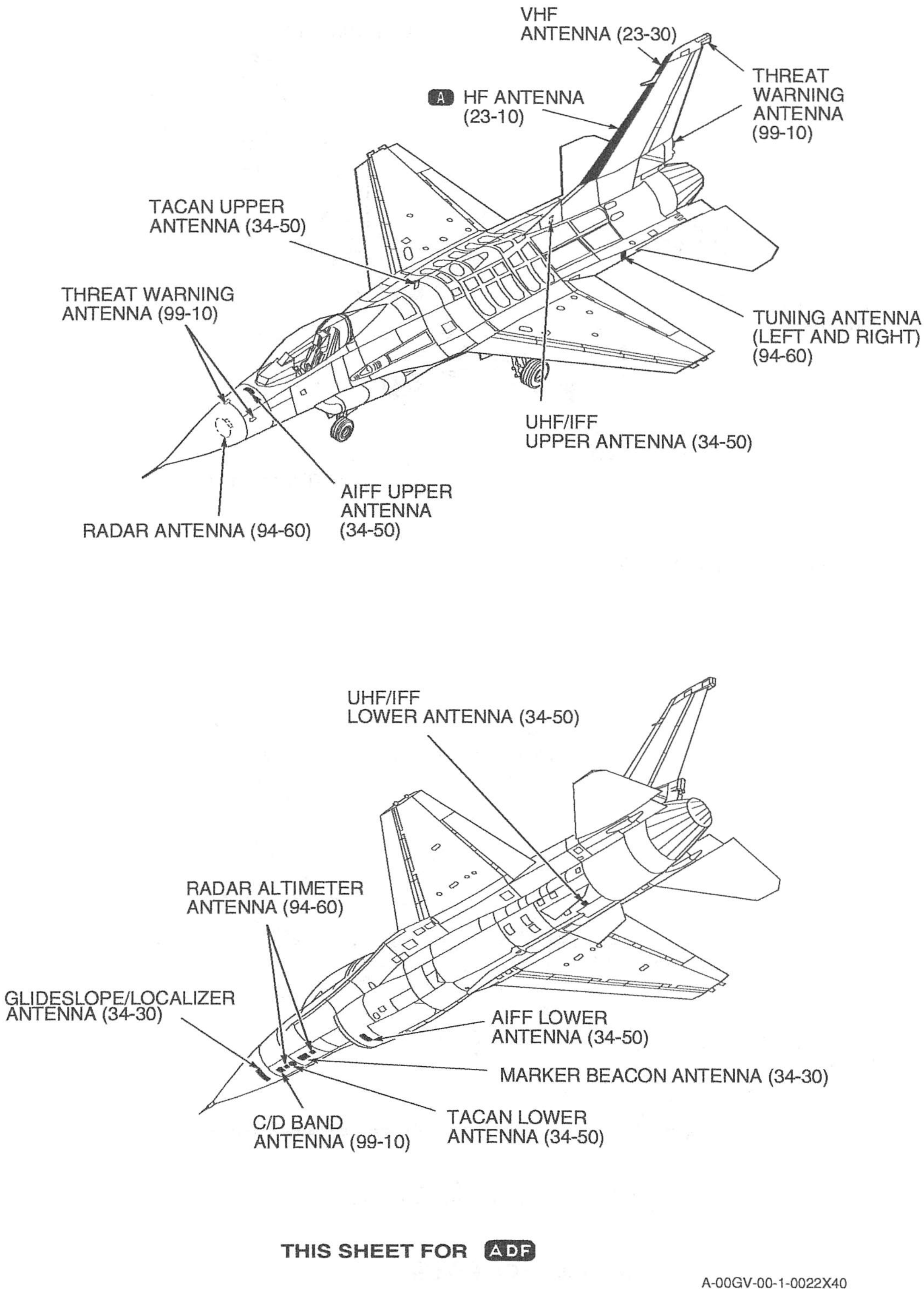

Figure 00-17. Antenna Locations. (Sheet 3)

00.7 ELECTRICAL POWER SYSTEM (24-00).

Electrical power is supplied by a primary ac power generating system, a standby power system, an emergency ac power generating system, a dc power system, a flight control power supply system, and an external power system. The electrical power system controls and indicators are shown in Figure 00-18 and the equipment locations are shown in Figure 00-19. The electrical power system consists of the following subsystems:

a. AC Generation (24-20)

b. DC Generation (24-30)

c. External Power (24-40)

d. Distribution (24-50)

00.7.1 AC Generation (24-20).

The primary ac power generating system supplies 115/200-volt, 400 Hz, three-phase power to the aircraft systems and equipment. The generating system consists of a 40 kVA generator coupled to a constant-speed drive unit, a generator control unit, and a bus power contactor. The emergency ac power generating system supplies 115/200-volt, 400 Hz, three-phase power to the essential buses in the ac power panels. The system consists of a 5 kVA generator, a generator control unit, and a 500 VA, 1200 Hz, ac-to-dc converter. The generator, driven by the Emergency Power Unit (EPU), powers the essential ac buses through the bus transfer relays. The Permanent Magnet Generator (PMG) section of the emergency generator provides backup power to the four flight control inverters through the 500 VA, 1200 Hz converter. In case of failure of the emergency generator, the PMG output is available as long as the generator is rotating. (Refer to TO 1F-16( )-2-49GS-00-1, EMERGENCY POWER SYSTEM.)

00.7.2 Flight Control Power Supply System (24-20).

The flight control power supply system consists of one PMG, two Converter/Regulators (C/R), and four inverter assemblies. The dedicated PMG provides four isolated three-phase outputs. The voltage and frequency vary with engine speed. The four inverter assemblies consist of an inverter and a sealed cell nickel-cadmium battery. The inverters accept 28 volts dc from the respective C/R and provide 26-volt ac, 800 Hz power to the flight control system. The integral battery provides power to the inverter when the input from the C/R is lower than the battery voltage. The batteries are continually charged from the power source input during flight and from the aircraft battery when the aircraft is not operating. Control and status information for the flight control power system is on the test panel located on the left crew station console.

00.7.3 DC Generation (24-30).

DC generation supplies nominally 28-volt dc. This power is supplied by two ac-to-dc, 100-ampere, 28-volt dc converters and a 26-volt nickel-cadmium battery. The converters receive 115/200-volt, 400 Hz, three-phase power from emergency ac buses No. 1 and No. 2 and supply 28-volt dc power to emergency dc buses No. 1 (aft equipment bay dc power panel) and No. 2 (right strake dc power panel), respectively. Two battery buses, located in the right strake dc power panel and aft equipment bay, are fed by each emergency dc bus, through isolating diodes, and by the aircraft battery. The battery is charged and monitored by a battery charger/control unit.

00.7.4 External Power (24-40).

An external source of electrical power may be connected to the aircraft for maintenance and systems checkout. The external power provisions are located in the electrical equipment bay on the right side of the engine inlet. (See Figure 00-19.) The provisions include the receptacle, power monitor, and power feeders. The power monitor controls the external power side of the power contactor to insure that voltage of improper magnitude, frequency, or phase sequence is not applied to the aircraft systems.

NOTE

During extended periods, when flight control power is not required, the FLCS PWR switch is positioned to MAINT to remove power from the control system.

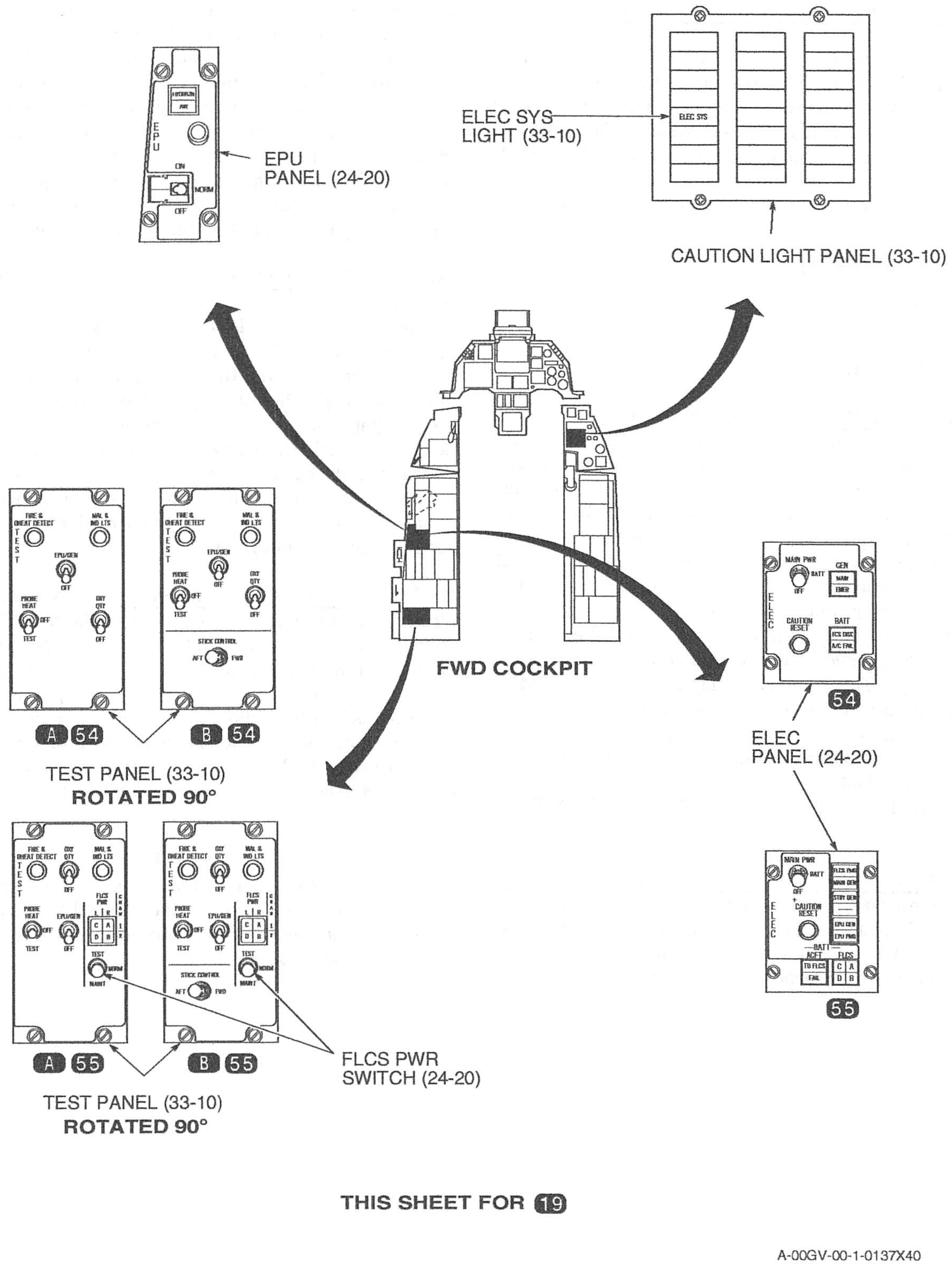

Figure 00-18. Electrical Power System Cockpit Controls and Indicators. (Sheet 1 of 2)

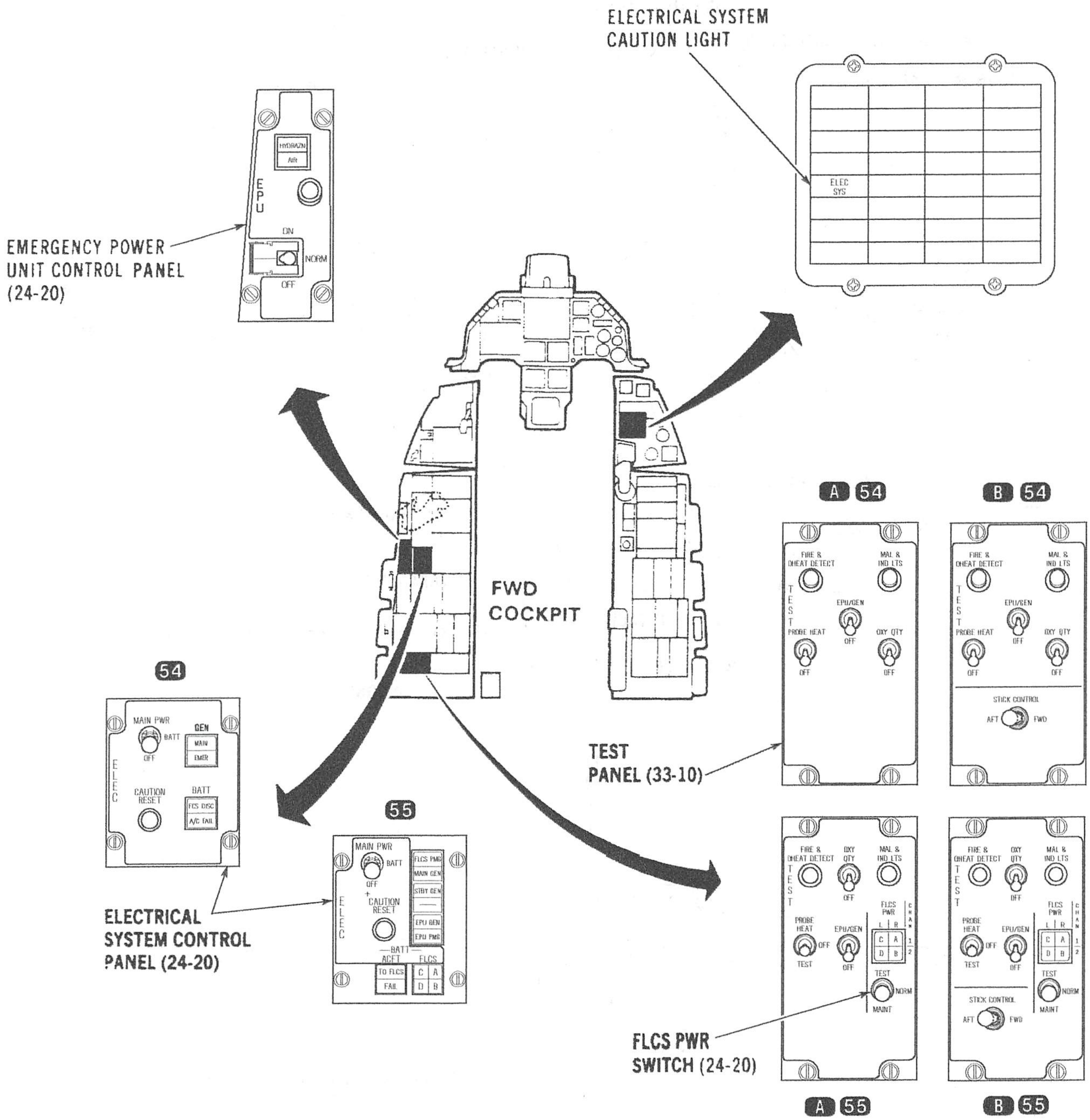

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Figure 00-18. Electrical Power System Cockpit Controls and Indicators. (Sheet 2)

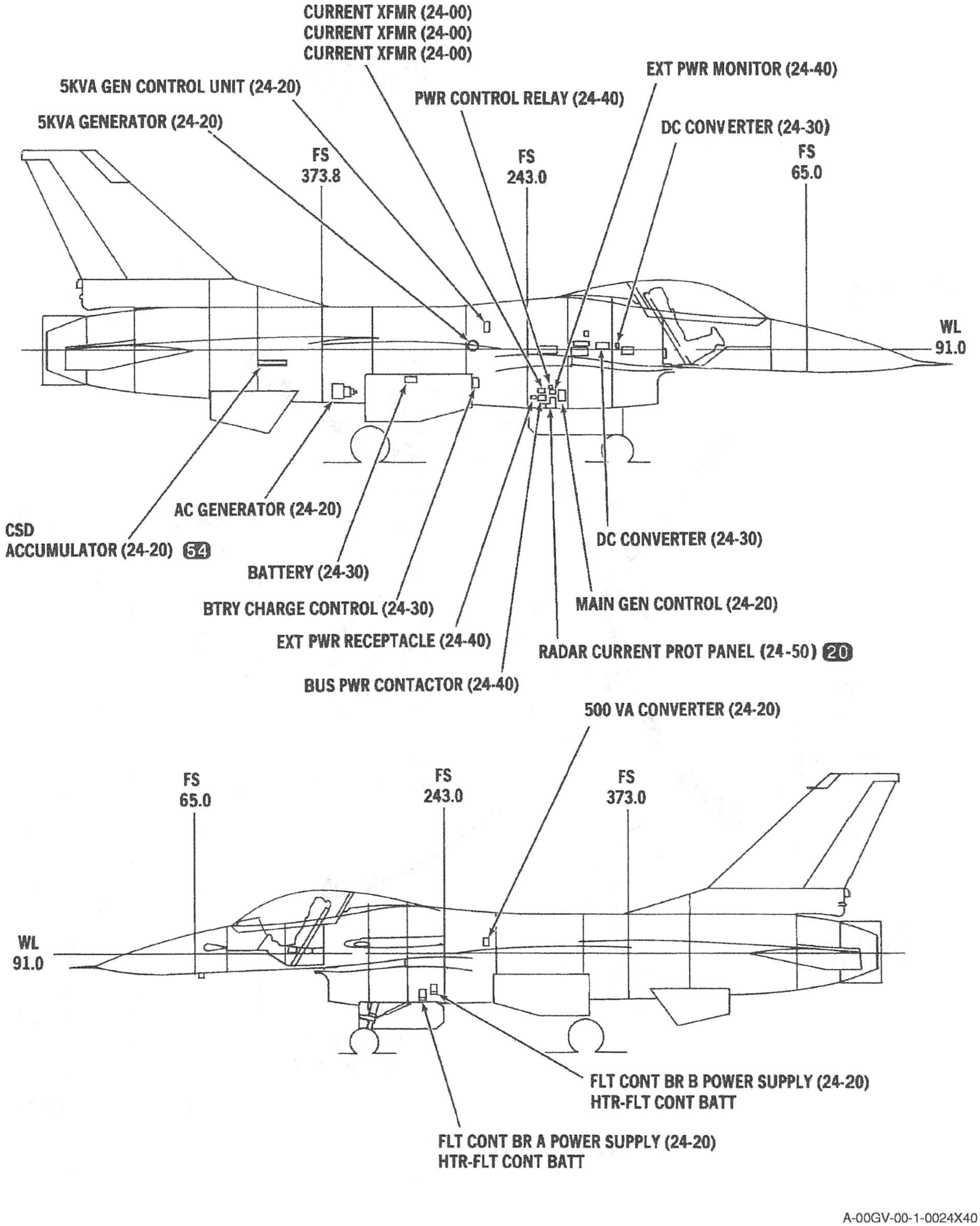

Figure 00-19. Electrical Power System Components Location.

00.8 FIRE PROTECTION SYSTEM (GENERAL) (26-00).

The fire protection system consists of the nacelle ventilation system, EPU compartment ventilation, gun compartment ventilation, the engine fire and overheat detection system, and the fuel tank inerting system. Cockpit controls and indicators for the fire protection system are shown in Figure 00-20. Nacelle ventilation provides sufficient air velocity from fore to aft in the nacelle to (1) prevent spontaneous ignition of combustible vapor contacting a hot surface (bleed air line or engine surface) and (2) prevent forward propagation of a flame from the engine compartment to other areas of the aircraft. Nacelle ventilation provides airflow to the nacelle whenever the engine is operating. Airflow is induced by bleed-air ejectors during ground operation and low speed flight when the landing gear is extended. The fire protection system consists of the following subsystems:

a. Fire and Overheat Detection (26-10)

b. Fuel Inerting (26-30)

The nacelle ventilation provides sufficient air velocity from fore to aft in the nacelle to (1) prevent spontaneous ignition of combustible vapor contacting a hot surface (bleed air line or engine surface) and (2) prevent forward propagation of a flame from the engine compartment to other areas of the aircraft. The nacelle ventilation system provides airflow to the nacelle whenever the engine is operating. Airflow is induced by bleed air ejectors during ground operation and low speed flight when the landing gear is extended.

00.8.1 Fire and Overheat Detection (26-10).

Detection provides a means of sensing a fire or overheat condition and displaying a warning. Overheat detection senses excessive temperature conditions in the engine compartment (575°F) and in the fuselage areas adjacent to bleed lines (400°F) and illuminates the OVERHEAT caution light on the caution light panel. The fire detection subsystem senses temperatures which exceed 765°F in the engine compartment and illuminates the ENG FIRE warning light on the glareshield. Locations of fire detect and overheat elements are shown in Figure 00-21.

00.8.2 Fuel Inerting (26-30).

Fuel inerting prevents ignition of fuel vapors inside the fuel tank should the tank be hit by small arms fire. It is intended to be used only in combat situations and utilizes Halon 1301 (bromotrifluoro-methane) as an inerting agent. Halon is a fluid that prevents combustion when vaporized and mixed with air in a 6 percent (by volume) mixture. Locations of Halon system elements are shown in Figure 00-22.

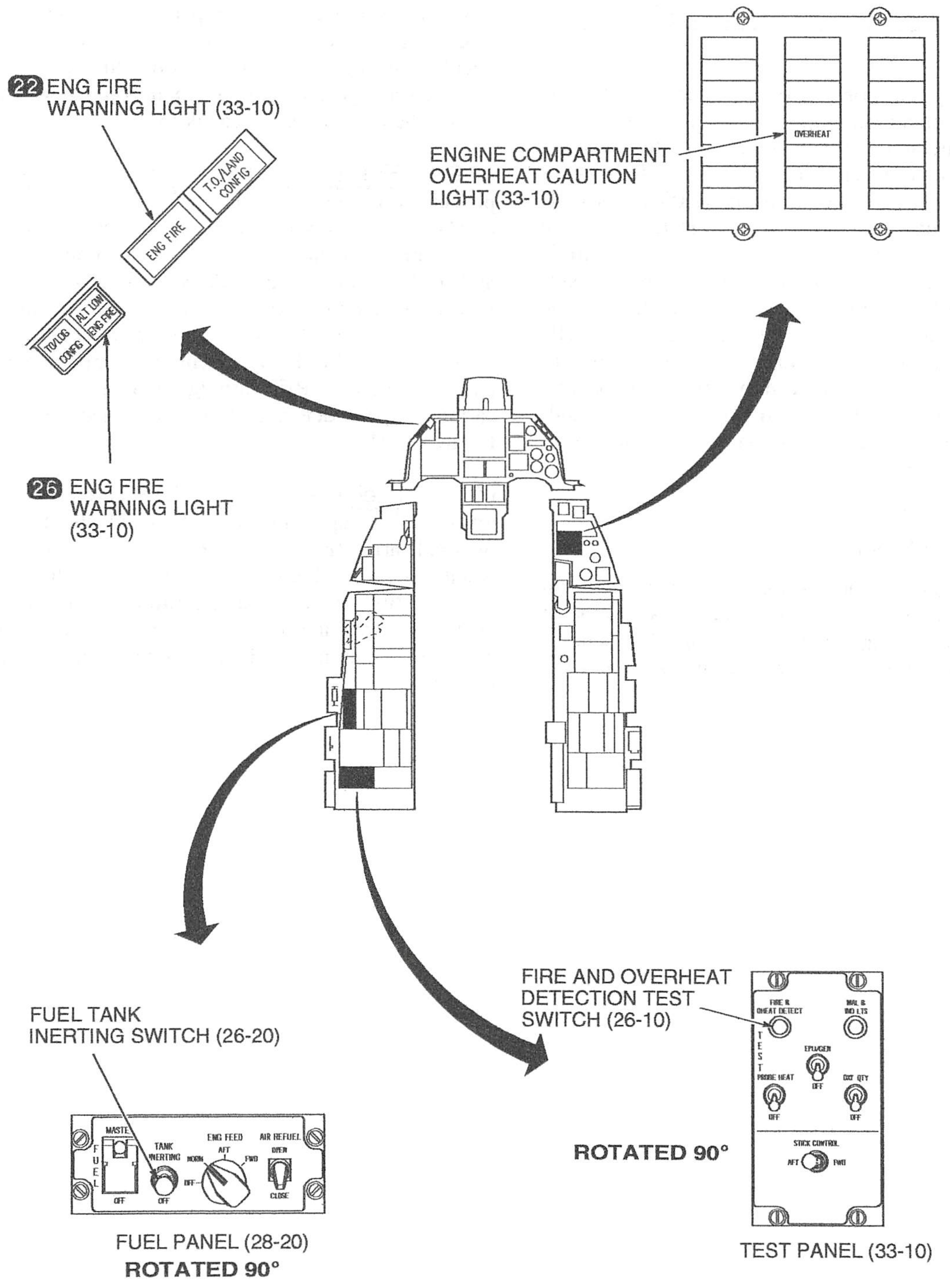

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Figure 00-20. Fire Protection System Cockpit Controls and Indicators. (Sheet 1 of 2)

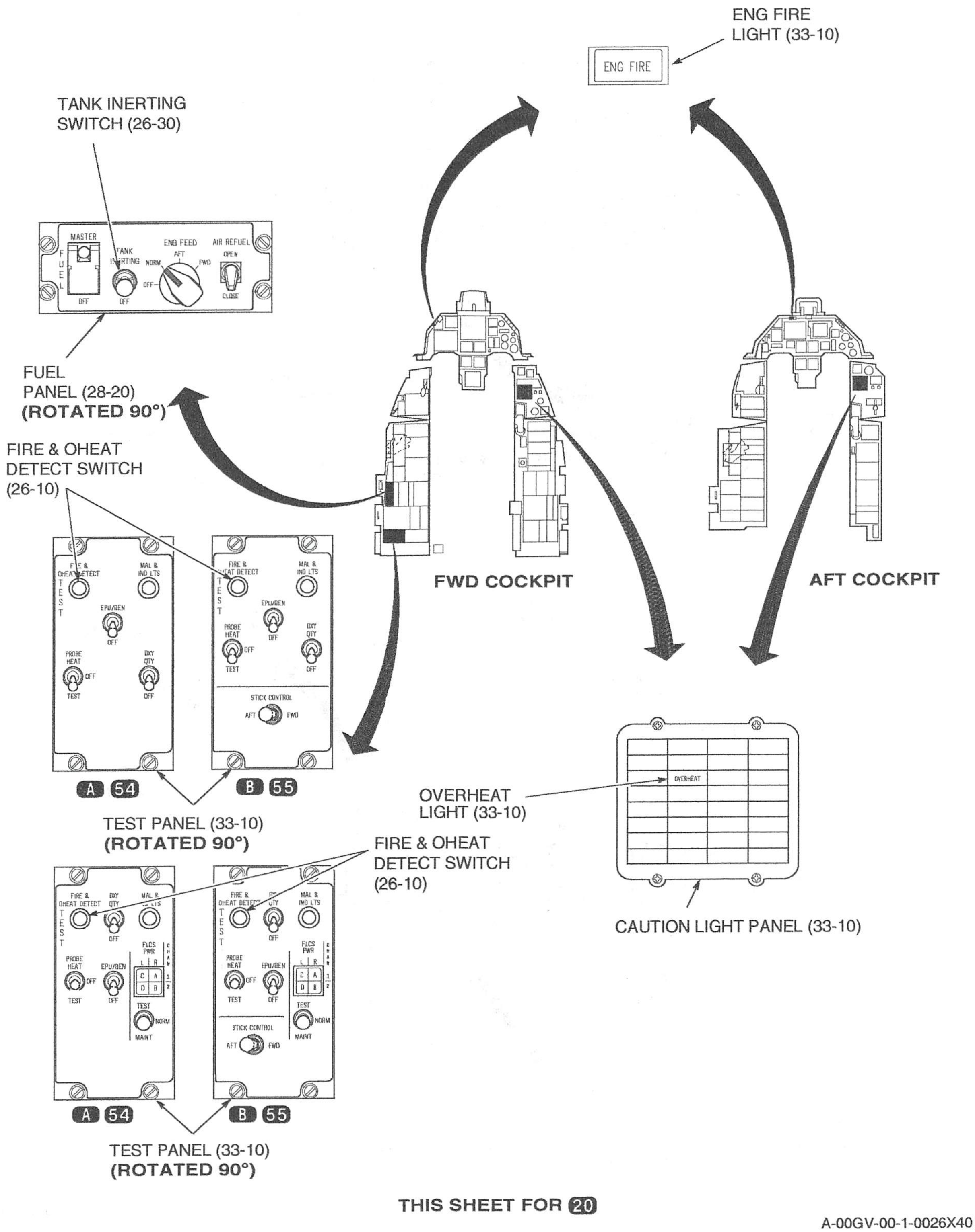

Figure 00-20. Fire Protection System Cockpit Controls and Indicators. (Sheet 2)

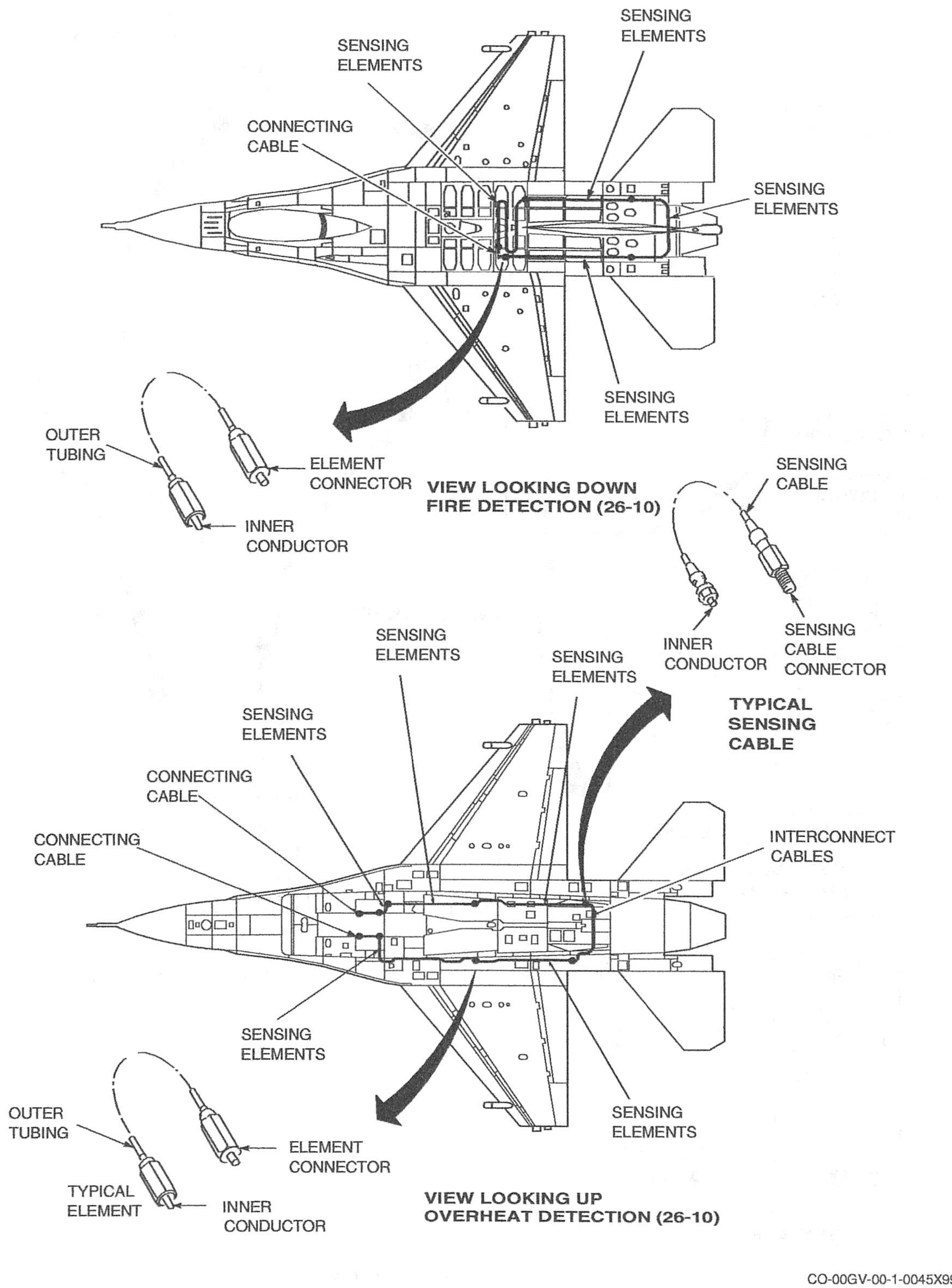

Figure 00-21. Fire Detect and Overheat Elements.

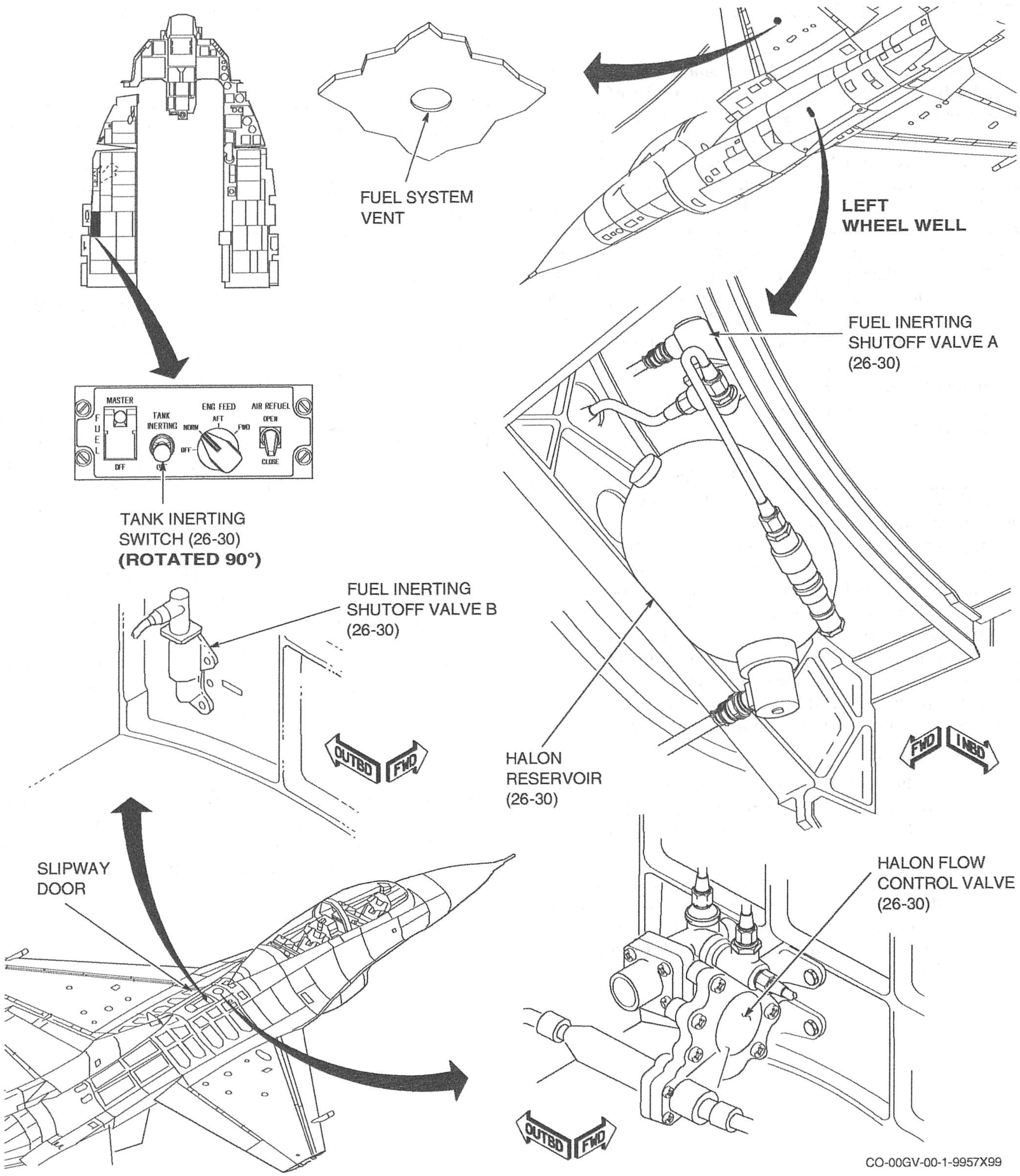

Figure 00-22. Halon System Elements Location.

00.9 FLIGHT CONTROL SYSTEM (27-00).

The primary flight control system is a full fly-by-wire system which does not use conventional mechanical linkages or control cables between the cockpit and the control surfaces. The system provides three-axis flightpath control through use of side stick controller and rudder pedals. The side stick controller and rudder pedals are minimum displacement-type, force-sensing units. The system has four independent electronic branches (quadruple redundant) which process pilot command inputs. Command inputs to the system are by means of the quadruple-redundant sensors in the side stick controller and rudder pedals. Feedback stabilization is provided by quadruple aircraft motion sensors (rate gyros and accelerometers). Provisions are included for shutting off power to the flight control system while undergoing routine maintenance operations. The capability is provided by the FLCS PWR switch located on the TEST panel (Figure 00-23). The locations of the flight control system components are shown in Figure 00-24.

00.9.1 Side Stick Controller. The side stick controller (Figure 00-23) is a force-sensing unit containing quadrex transducers in both pitch and roll axes. Fore and aft force on the handgrip produces quadrex electrical pitch command signals. Side-to-side force on the handgrip produces quadrex electrical roll command signals. The signals are routed to the flight control computer for processing. The resulting signals are sent to the horizontal tail and flaperon integrated servoactuators to position the flight surfaces. Artificial feel for the side stick controller is provided by beams and coil springs within the transducer assembly. A paddle switch located at the base of the controller provides autopilot override.

FWD Allows the forward cockpit pilot to take control of the pitch and roll functions of the side stick and rudder pedals by depressing the paddle switch. The aft cockpit pitch and roll functions are locked out.

AFT Allows the aft cockpit pilot to take control of the pitch and roll functions of the side stick and rudder pedals by depressing the paddle switch. The forward cockpit pitch and roll functions are locked out.

A side stick selector lamp, located on the instrument panel of the aft cockpit, indicates the position of the side stick selector switch by displaying the word FWD or AFT as applicable. The side stick override lamp, located on the forward and aft cockpit instrument panels, lights and displays OVRD when the applicable paddle switch has been used to take control.

00.9.2 Rudder (27-20). The rudder is controlled by pedals which are minimum deflection force-sensing units containing quadrex transducers in the yaw axis. Force on the applicable rudder pedal produces quadrex electrical yaw command signals. The signals are routed to the flight control computer for processing. The resulting signals are sent to the rudder integrated servoactuator to position the rudder. The rudder pedals are also used to generate brake command signals and nosewheel steering signals. Artificial feel is provided by both mechanical and electrical breakout forces.

00.9.3 Speedbrakes (27-60). The speedbrake consists of two pairs of clamshell surfaces (doors) located adjacent to the engine nozzle and inboard of the horizontal stabilizer. A three-position switch on the throttle grip controls the speedbrake doors and will open each door to 60 degrees in 2 to 3 seconds at traffic pattern speeds. A limit switch on each lower speedbrake door limits door extension to 43 degrees when in flight with landing gear extended. This limitation prevents the lower door from striking the runway under extreme noseup landing conditions. When the nose landing gear strut compresses upon landing, the speedbrake doors may be commanded fully open by the speedbrake switch. The SPEED BRAKE position indicator, located on the landing gear control panel, is a three-position indicator labeled SPEED BRAKE.

00.9.4 Leading Edge Flaps (27-80). The leading edge flaps provide high lift for takeoff and landing and optimized performance in each phase of flight. The leading edge flaps are full span surfaces hinged to the wing front spar and may be positioned from 2 degrees up to 25 degrees down.

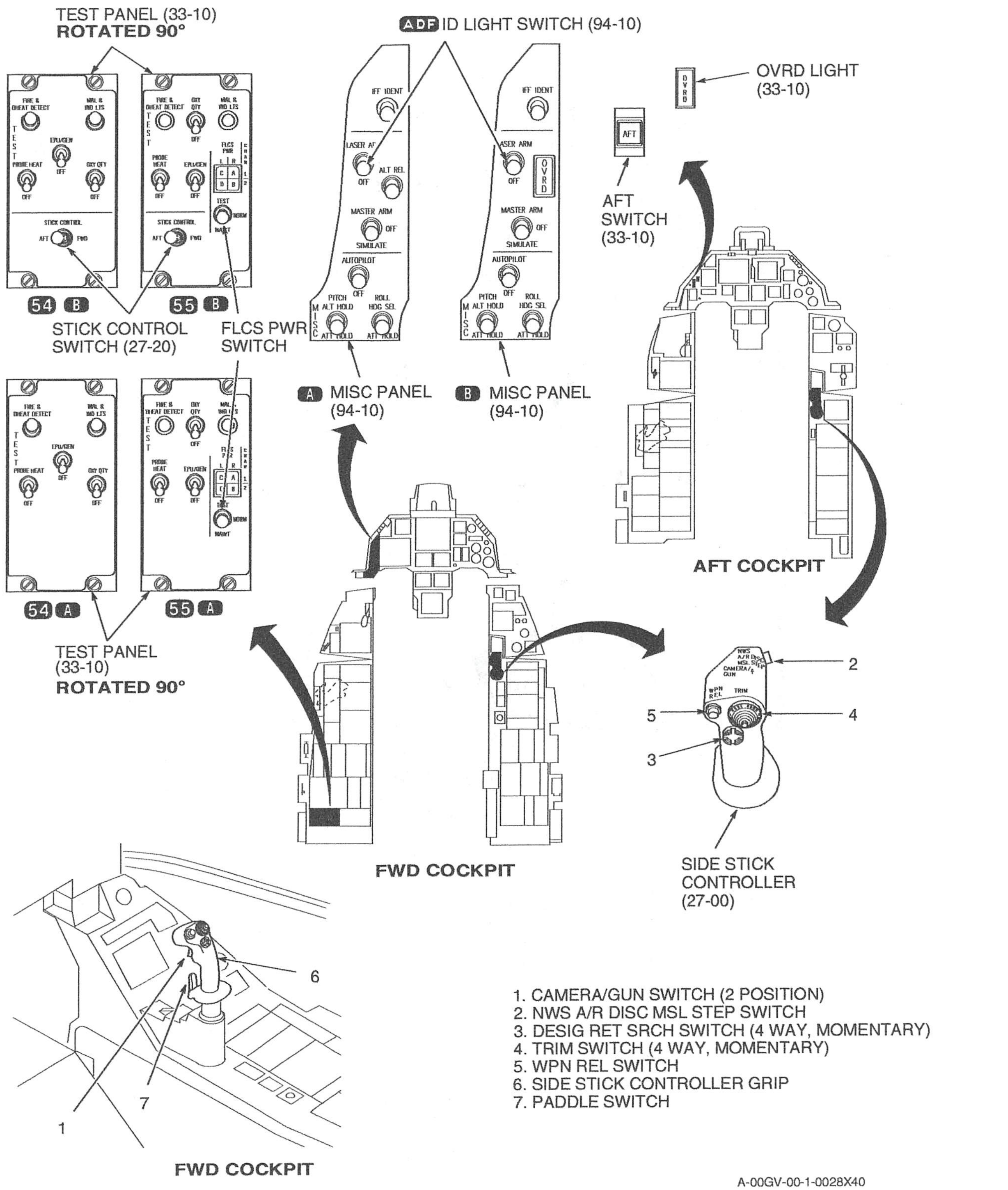

Figure 00-23. Side Stick Controller, Selector Switch, and Indicators.

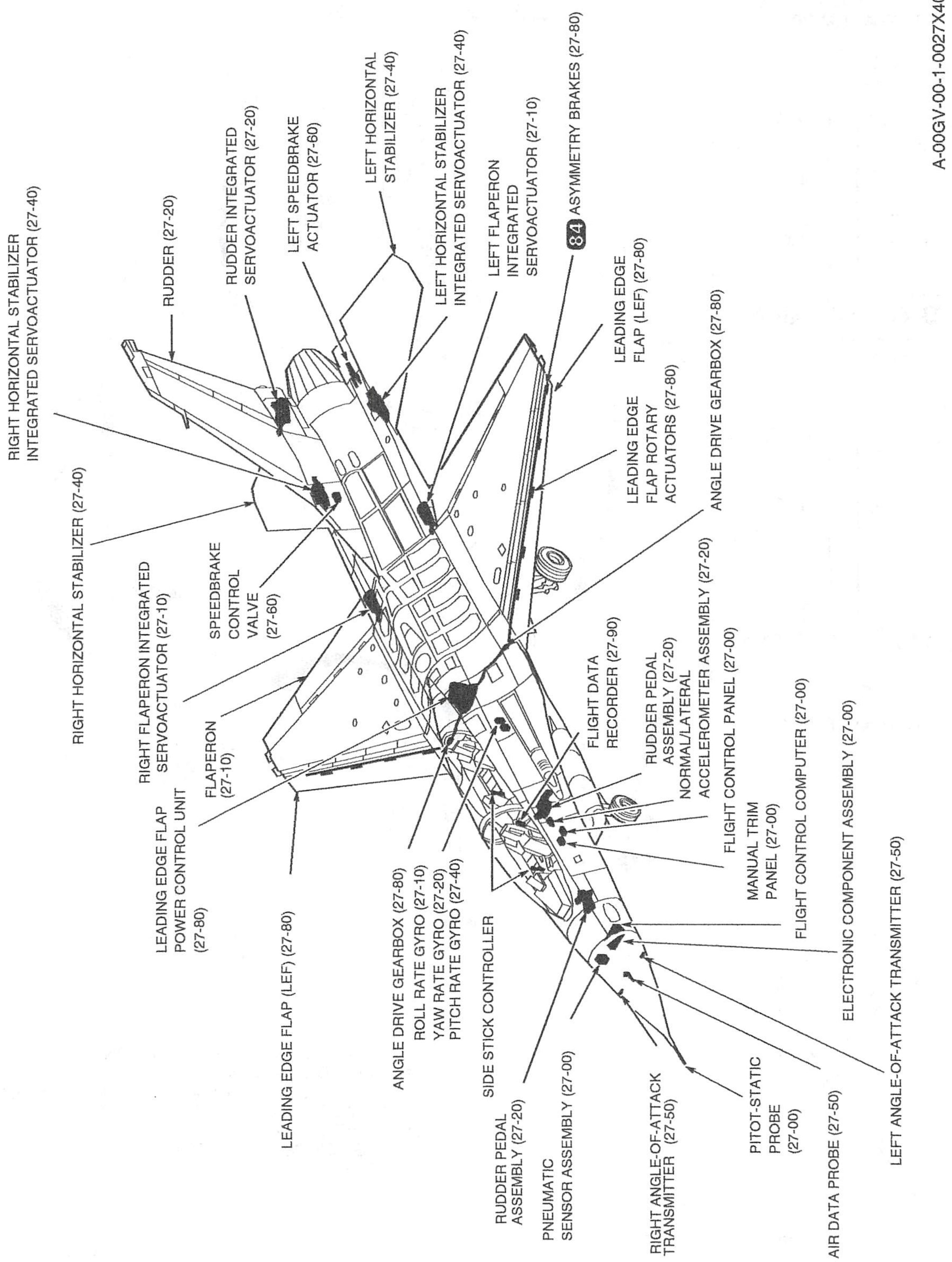

Figure 00-24. Flight Control System Components Location.

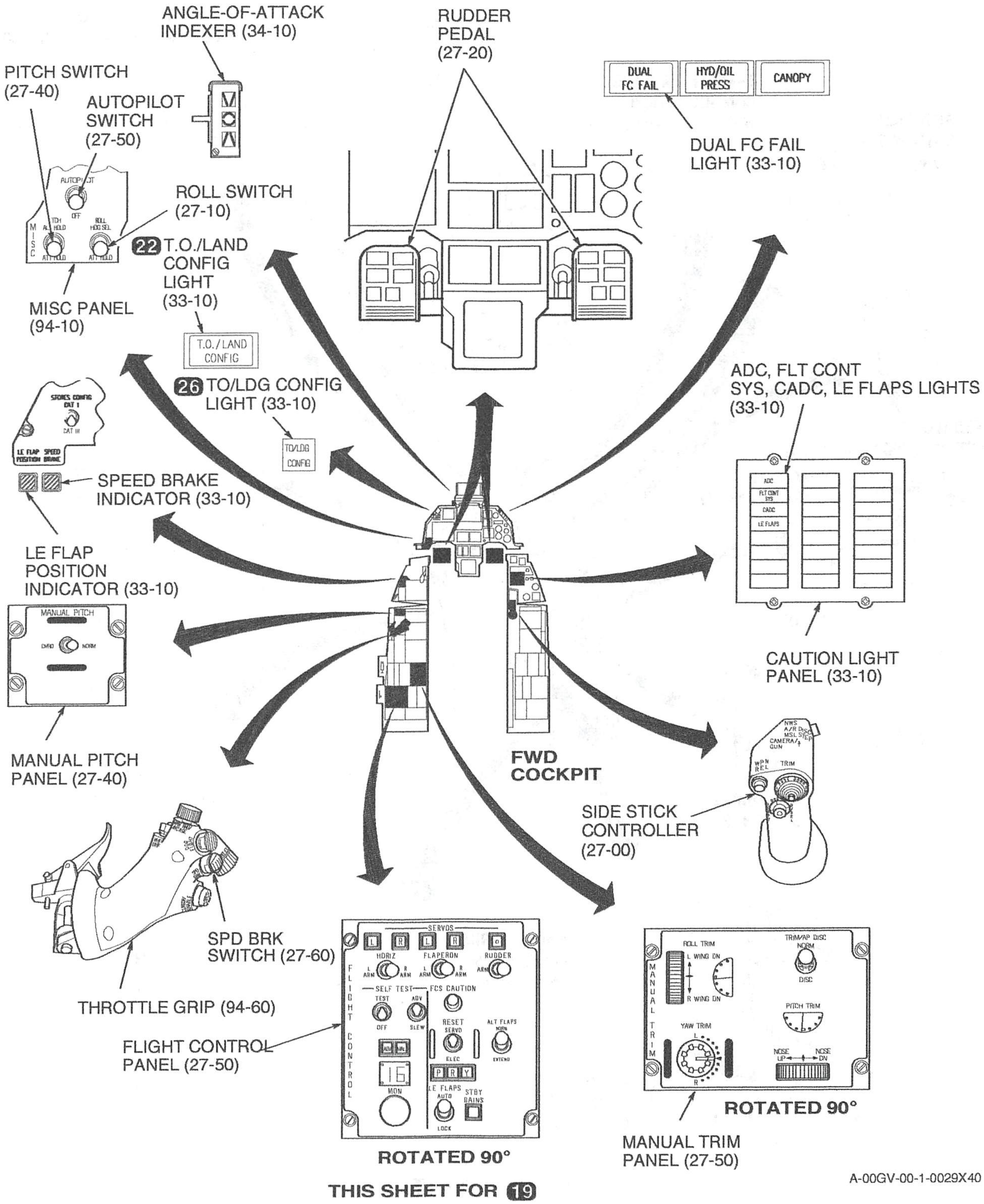

Figure 00-25. Flight Control System Cockpit Controls and Indicators. (Sheet 1 of 2)

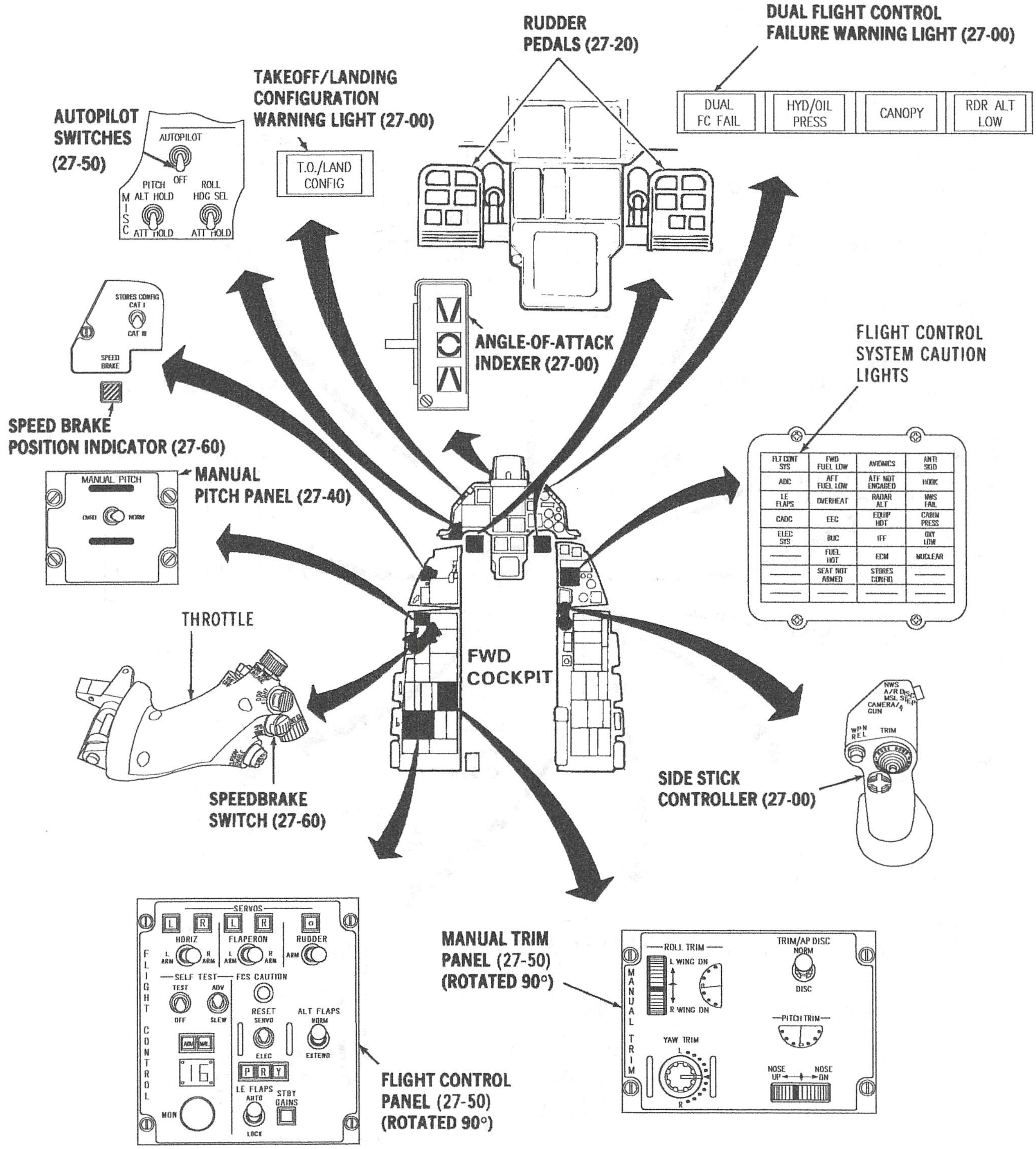

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Figure 00-25. Flight Control System Cockpit Controls and Indicators. (Sheet 2)

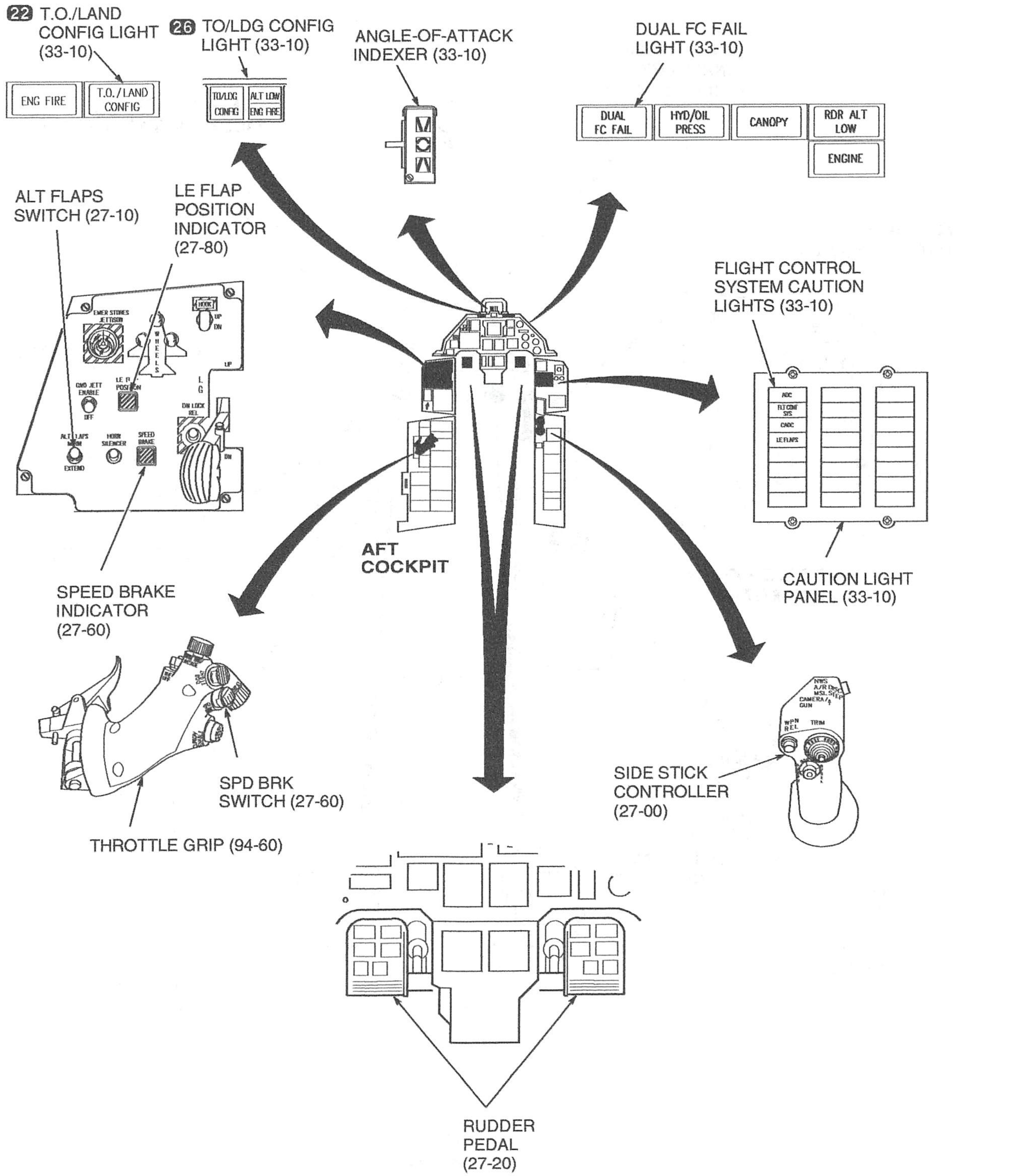

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Figure 00-26. Flight Control System Cockpit Controls and Indicators. (Sheet 1 of 2)

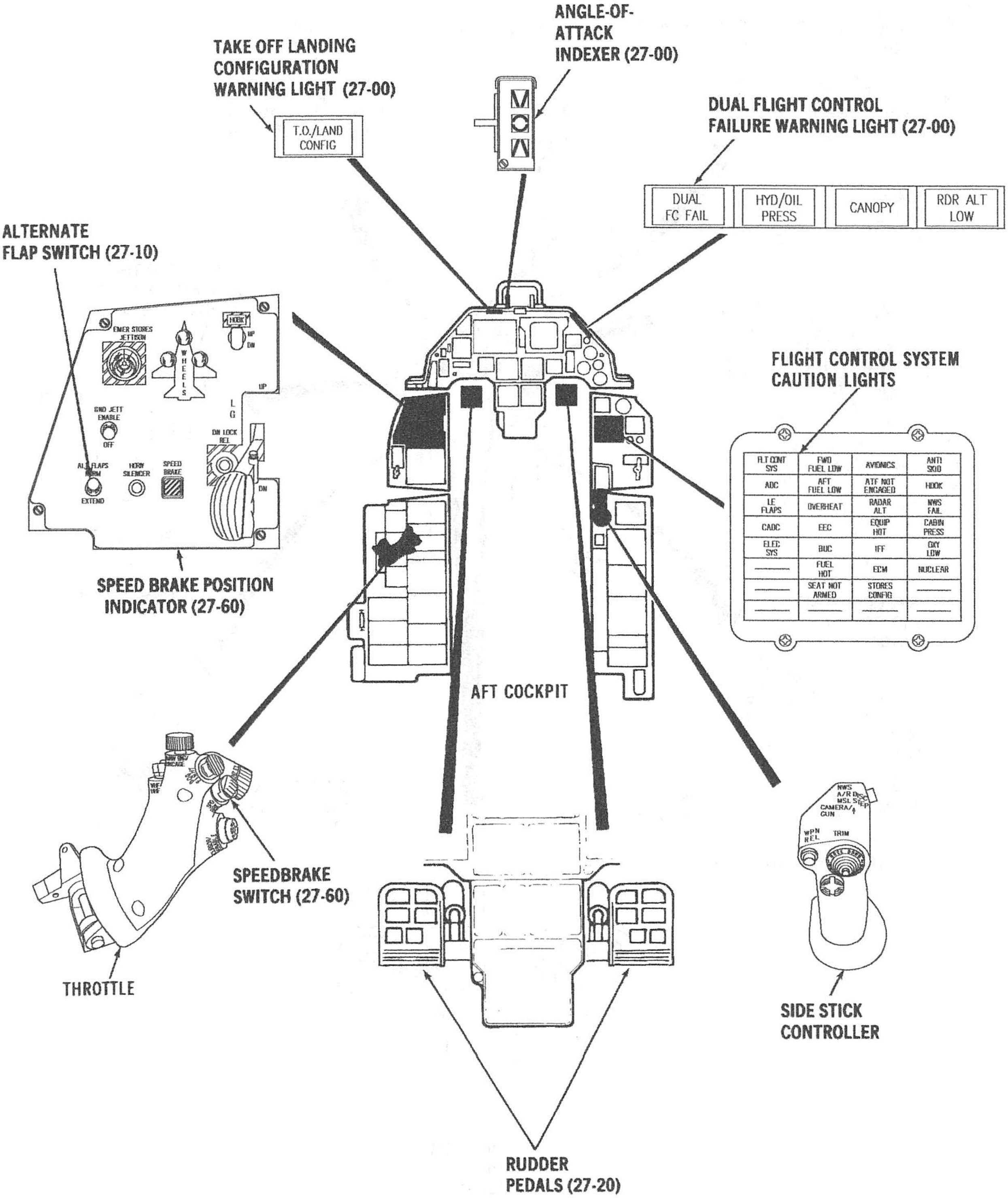

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Figure 00-26. Flight Control System Cockpit Controls and Indicators. (Sheet 2)

00.10 FUEL SYSTEM (28-00).

The fuel system includes the fuel tanks, distribution and transfer equipment, quantity measuring, level sensing, and aerial refueling and ground fueling provisions. Cockpit controls are shown in Figure 00-27 and aerial refueling components location is shown in Figure 00-29. The fuel system (28-00) consists of the following subsystems:

a. Storage (28-10)

b. Distribution (28-20)

c. Indicating (28-40)

00.10.1 Storage (28-10). Internal fuel is contained in seven tanks. Refer to Figure 00-28 for tank locations and nomenclatures. All tanks, with the exception of F1, are multibarrier-sealed integral type, while F1 is a bladder-cell type. Provisions are also made for attaching two jettisonable tanks under the wings and a single jettisonable tank on the fuselage centerline. Fuel tank capacities are summarized in Table 00-1 for JP-8 and alternate JP-4 or JP-5.

00.10.2 Distribution (28-20). The aircraft can be refueled by either ground pressure systems or flying boom-type aircraft. Ground refueling is accomplished through a receptacle on the lower left side just forward of the wing trailing edge. A fuel pressure of 50 psi is applied to the refuel manifold causing the refuel shutoff valve in the forward and aft reservoirs to open, allowing fuel to enter each reservoir tank. When the reservoirs are full, fuel is delivered to the other tanks through the siphon system in reverse order of emptying. The external tanks can be selectively refueled by use of manually operated valves located in each external tank pylon and in the right wheel well. Defueling is accomplished through a receptacle on the lower right side just forward of the wing trailing edge. The fuel boost pumps and transfer pumps provide for powered defueling of the aircraft. When external tanks are installed, a source of compressed air must be connected to the ground air service connection to pressurize the external fuel tanks for offloading their fuel. Refueling/defueling is accomplished per TO 1F-16( )-2-12JG-00-1. Aerial refueling is accomplished through a receptacle located on the top fuselage centerline aft of the canopy. A hydraulically operated slipway door uncovers the receptacle and four locating lights and a floodlight reveals the receptacle to the tanker boom operator. The refueling boom is inserted and latched automatically and hydraulically in place. At the termination of the refueling operation, the last float valve closes, causing an increase in the refuel line pressure, thus triggering the boom to be unlatched. Unlatching signals can also be initiated either in the cockpit or by the boom operator. Locations of components for aerial refueling are shown in Figure 00-29.

00.10.2.1 Distribution and Transfer. The internal fuel tanks are divided functionally into two systems. Tanks F1, F2, right wing, and forward reservoir make up the forward system and tanks A1, left wing, and aft reservoir make up the aft system. External wing-mounted tanks become part of the system of which their wing is a member and the external centerline tank is divided equally between the two systems. In order to maintain the aircraft center of gravity nearly stationary, fuel is taken from each system equally by a hydraulically powered fuel flow proportioner. A crossfeed system is also provided to withdraw fuel from one system only or to transfer fuel between systems in an emergency situation. Fuel being delivered to the fuel flow proportioner is taken from the forward and aft reservoirs. Electrical boost pumps are also strategically placed in the reservoirs to insure constant fuel flow during inverted flight. As fuel is taken from the reservoirs, it is replaced through a siphon, vent, bleed air pressurization system; by the other tanks in the system; right wing to F1 to F2 to forward reservoir; and left wing to A1 to aft reservoir, respectively. A power transfer system is also included to scavenge the tanks to minimize unusable fuel and as a redundancy to the siphoning system. External wing tank fuel is transferred to its respective wing tank by air pressure and the external centerline tank fuel is transferred by air pressure to both systems, maintaining them full until the centerline tank is empty. As the fuel leaves the fuel flow proportioner on its way toward the engine, it is channeled through a heat exchanger where fuel is used to cool the hydraulic fluids and the accessory gearbox and electrical generator oils. A thermally activated valve in the heat exchanger output opens at 185°F, bypassing fuel back to the reservoirs and increasing flow to permit increased cooling. The bypassed fuel is returned to each reservoir equally by a flow divider valve. Fuel is extracted upstream of the heat exchanger to cool the electronic engine control unit. The fuel is returned to the reservoirs from the electronic engine control unit through separate lines containing orifices to insure equal fuel distribution between the reservoirs. **A** The fuel system incorporates an automatic forward transfer trim system which will maintain a 300 (±300) pound differential (forward greater than aft) to minimize aft fuel imbalances. **B** The fuel system incorporates an automatic forward transfer trim system that will maintain a 1000 (±300) pound differential (aft greater than forward) to minimize aft fuel imbalances.

00.10.3 Indicating (28-40). A capacitance-type Fuel Quantity Measuring Subsystem (FQMS) is used to provide an indication of the quantity and location of fuel in the aircraft. A display, on the fuel quantity indicator, of total fuel and internal forward and aft system fuels is available, as well as selected displays of external centerline, external wing, wing, and reservoir quantities, by positioning the fuel quantity select panel switches.

00.10.3.1 Fuel Quantity Select Panel. The FUEL QTY SEL panel contains a six-position rotary switch marked TEST, NORM, RSVR, INT WING, EXT WING, and EXT CTR; the panel also contains the external fuel transfer switch marked NORM and WING FIRST.

00.10.3.2 Level Sensing. Four thermistor-type sensor assemblies are located in the reservoirs to provide air ejection and fuel low indications. Two thermistor units are placed in each reservoir, one at the 440-pound level and the other at the 400-pound (fwd) or 250-pound (aft) levels. The upper thermistor units are part of the air ejection system. The lower thermistors, when uncovered, energize the appropriate cockpit FUEL LOW warning light.

Table 00-1. Internal Fuel Tank Capacities.

INTERNAL TANKS	USABLE FUEL			
	GALLONS	POUNDS JP 4	POUNDS JP 5	POUNDS JP 8
LEFT WING INTERNAL TANK	87.9	571.5	598	598
RIGHT WING INTERNAL TANK	87.9	571.5	598	598
F1 FUSELAGE TANK	(A) 296.5	(A) 1927	(A) 2016	(A) 2016
	(B) 113	(B) 735	(B) 768	(B) 768
F2 FUSELAGE TANK	105.2	684	715.4	715.4
FWD RESERVOIR FUSELAGE TANK	68	442	462	462
AFT RESERVOIR FUSELAGE TANK	68	442	462	462
A1 FUSELAGE TANK	355.7	2312	2419	2419
FUEL LINES, ENGINE FEED	3.3	22	22	22
TOTAL	(A) 1072.5	(A) 6972	(A) 7293.4	(A) 7293.4
	(B) 889	(B) 5780	(B) 6044.4	(B) 6044.4

Table 00-2. External Fuel Tank Capacities.

	USABLE FUEL			
EXTERNAL TANKS	GALLONS	POUNDS JP 4	POUNDS JP 5	POUNDS JP 8
CENTERLINE	300	1950	2040	2040
LEFT/RIGHT WING	740*	4810	5032	5032
TOTAL EXTERNAL	1040	6760	7072	7072

NOTE

- These figures are estimates and the weights are based on JP-4 fuel at 6.5 pounds or alternate JP-5 and JP-8 fuel at 6.8 pounds per gallon (standard day only). The values shown in the chart may vary as the result of fuel temperature and specific gravity fluctuations which would be reflected on the quantity indicator readings.
- External tanks, when carried, will have the noted capacities.

* Two 370 Gallon Tanks

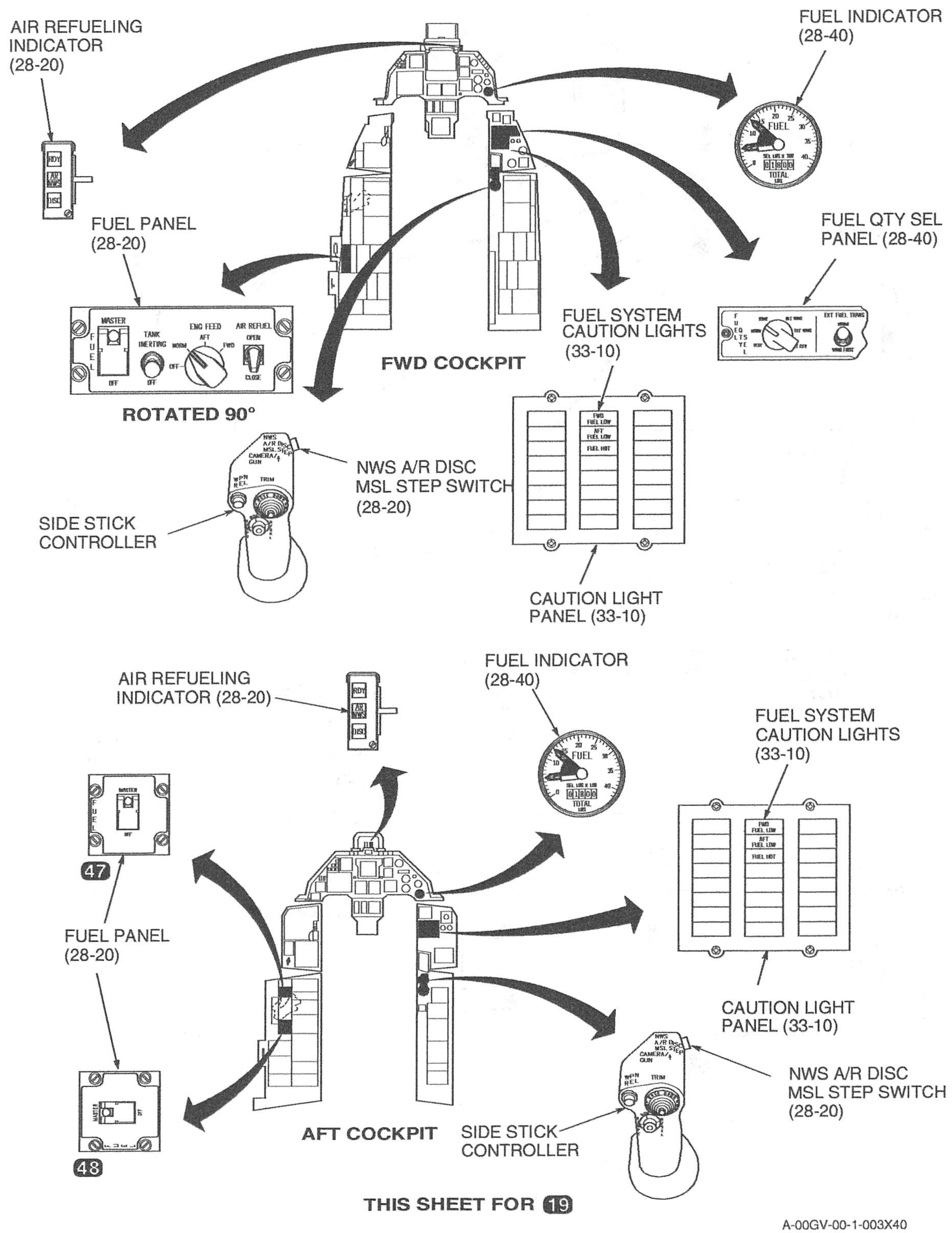


Figure 00-27. Fuel and Aerial Refueling System Cockpit Controls and Indicators. (Sheet 1 of 2)

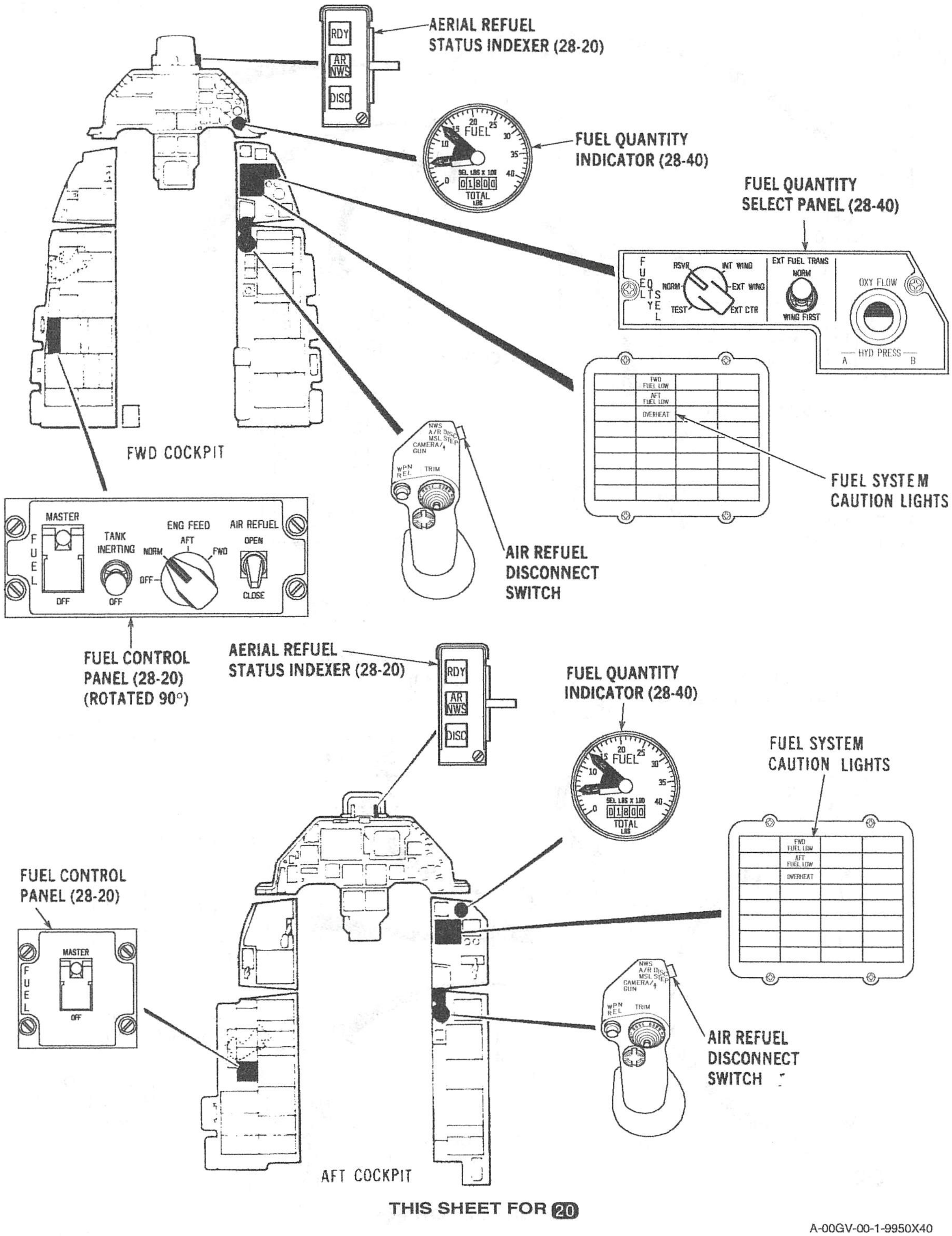


Figure 00-27. Fuel and Aerial Refueling System Cockpit Controls and Indicators. (Sheet 2)

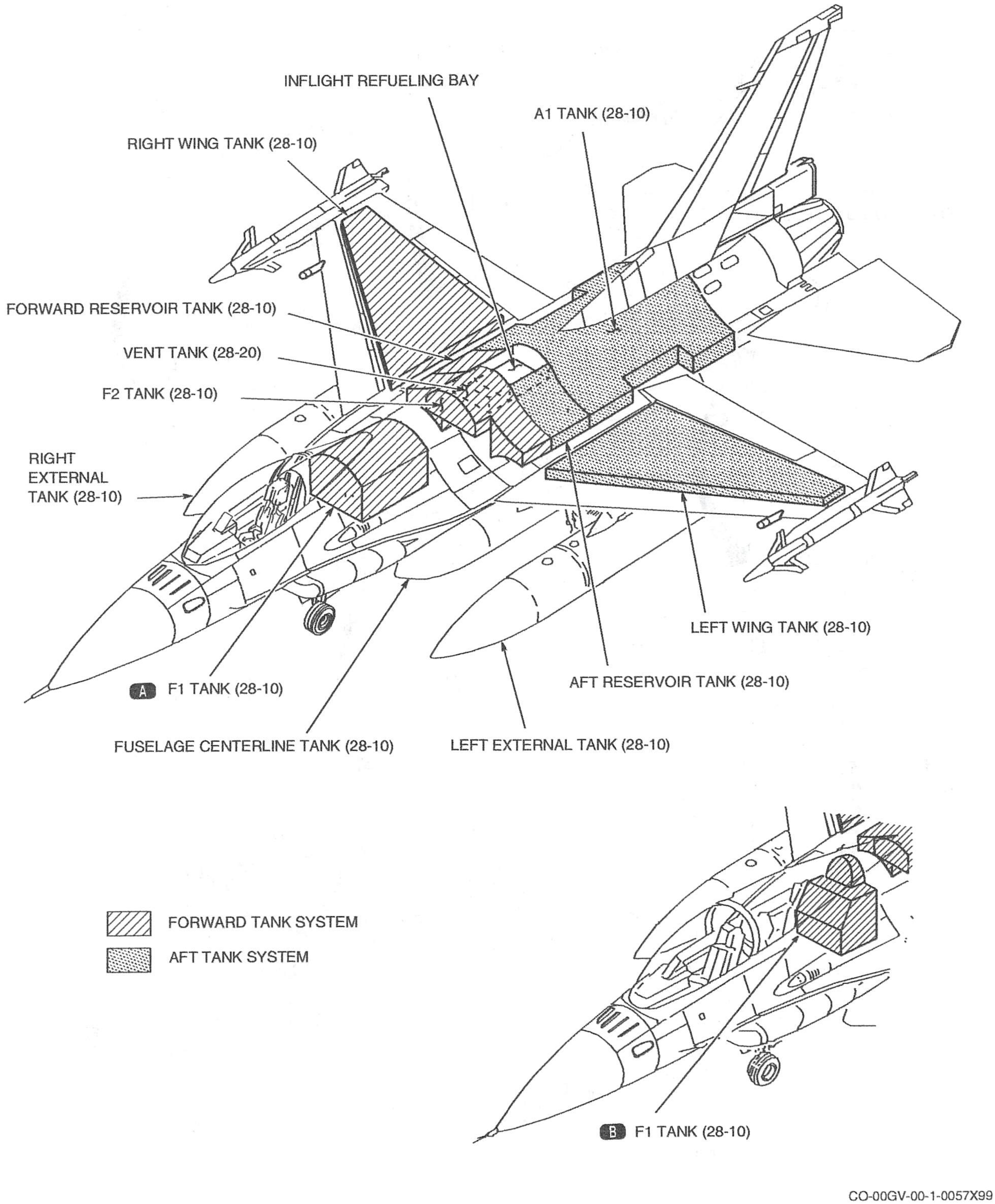


Figure 00-28. Fuel Tank Arrangement.

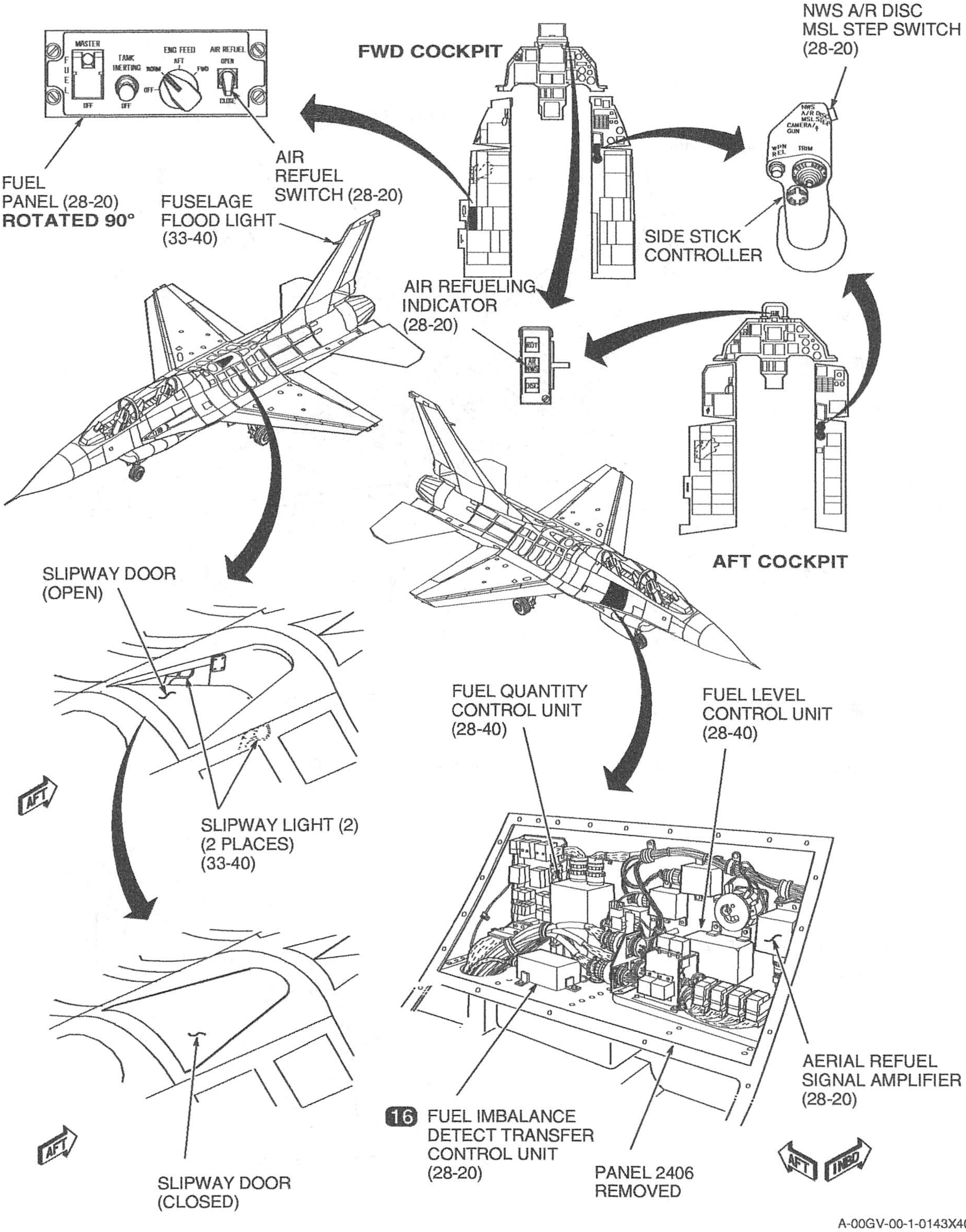


Figure 00-29. Aerial Refueling System Components Location.

00.11 HYDRAULIC SYSTEM (29-00).

The hydraulic system consists of the following subsystems:

a. Main (29-10)
b. Auxiliary (29-20)
c. Indicating (29-30)

00.11.1 Main (29-10). Hydraulic power is generated and distributed by two independent systems designated as hydraulic system A and hydraulic system B. Both systems are driven by the engine Power Takeoff (PTO) shaft through the airframe-mounted accessory gearbox and provide hydraulic pressure of 3100 psig for operation of aircraft systems. Hydraulic system A (primary) and hydraulic system B (combined) provide parallel power for operation of the primary flight control functions (flaperons, horizontal stabilizers, and rudder) and the wing leading edge flaps. In addition, system A provides power for the fuel flow proportioner pump and the speedbrakes. System B also provides power to the landing gear, nosewheel steering, wheel brakes, jet fuel starter, air refueling system, and gun system. System B is arranged so the landing gear system is isolated from the remaining portions of the system during flight phases by means of a shutoff valve in the pressure line. Check valves are located in the return lines to minimize loss of fluid from the reservoir in the event of a rupture in the isolated circuits. Hydraulic system cockpit indicators are shown in Figure 00-30 and components location is shown in Figure 00-31.

00.11.2 Auxiliary (29-20). Backup hydraulic power is supplied by the auxiliary power system. Each hydraulic system provides mechanical power conversion (pump), flow and pressure control, temperature control, fluid reservoirs, and fluid filtration.

00.11.3 Indicating (29-30). Pressure indicating gages and a low pressure warning light are provided as cockpit indicators (Figure 00-30).

00.12 ICE PROTECTION SYSTEM (30-00).

The ice protection system prevents the formation of ice on the flight environment probes. System components location and controls and indicators, including the location of the flight environmental probes, are shown in Figure 00-32. The ice protection system consists of the following subsystems:

a. Air Intakes (30-20)
b. Probe Heaters Anti-Icing (30-30)

00.12.1 Air Intakes (30-20). The air intake strut heater anti-icing subsystem prevents the formation of ice on the engine intake strut.

00.12.2 Probe Heaters Anti-Icing (30-30). The air data probes are located and mounted as shown in Figure 00-32 and are identified as (1) a nose-mounted pitot-static probe, (2) a fuselage-mounted air data probe, (3) two fuselage-mounted static pressure ports, (4) two radome-mounted angle-of-attack (AOA) transmitters, and (5) an engine air inlet nacelle-mounted total temperature probe.

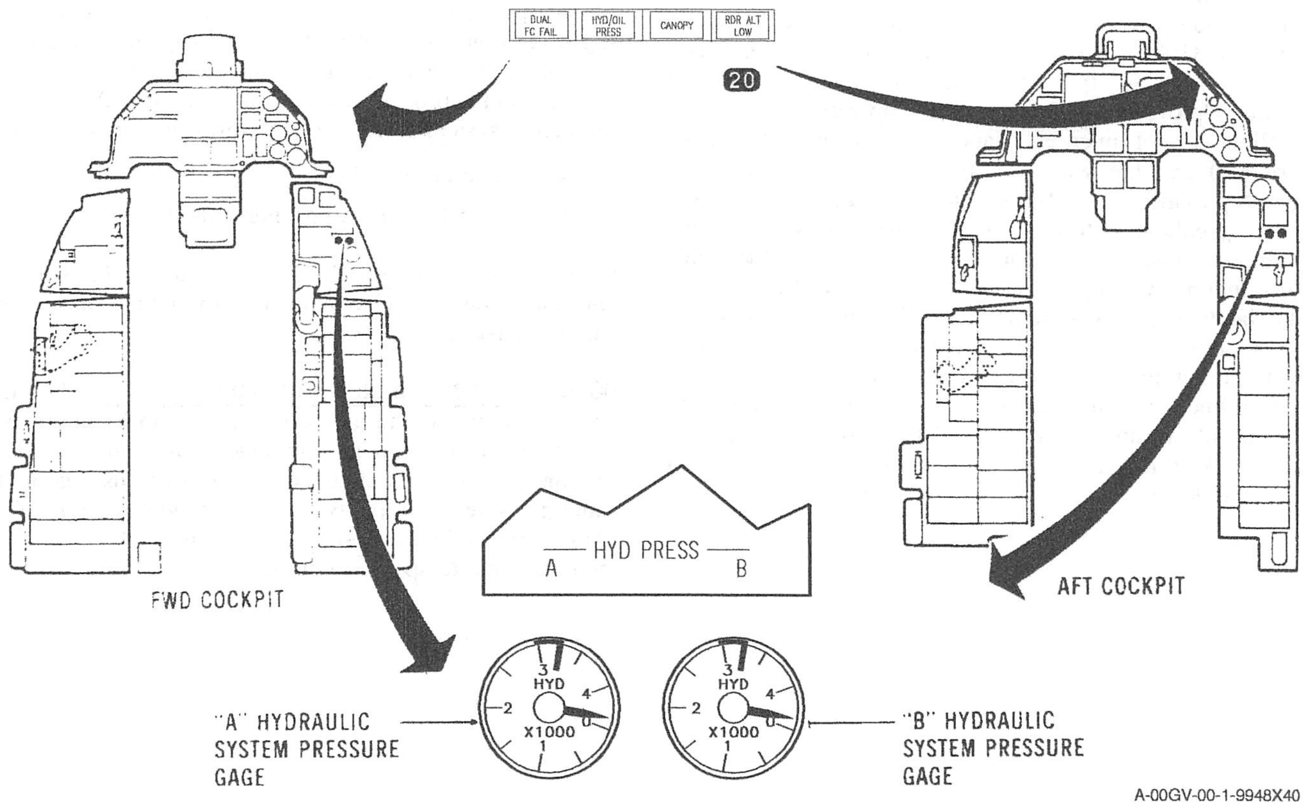


Figure 00-30. Hydraulic System Cockpit Indicators.

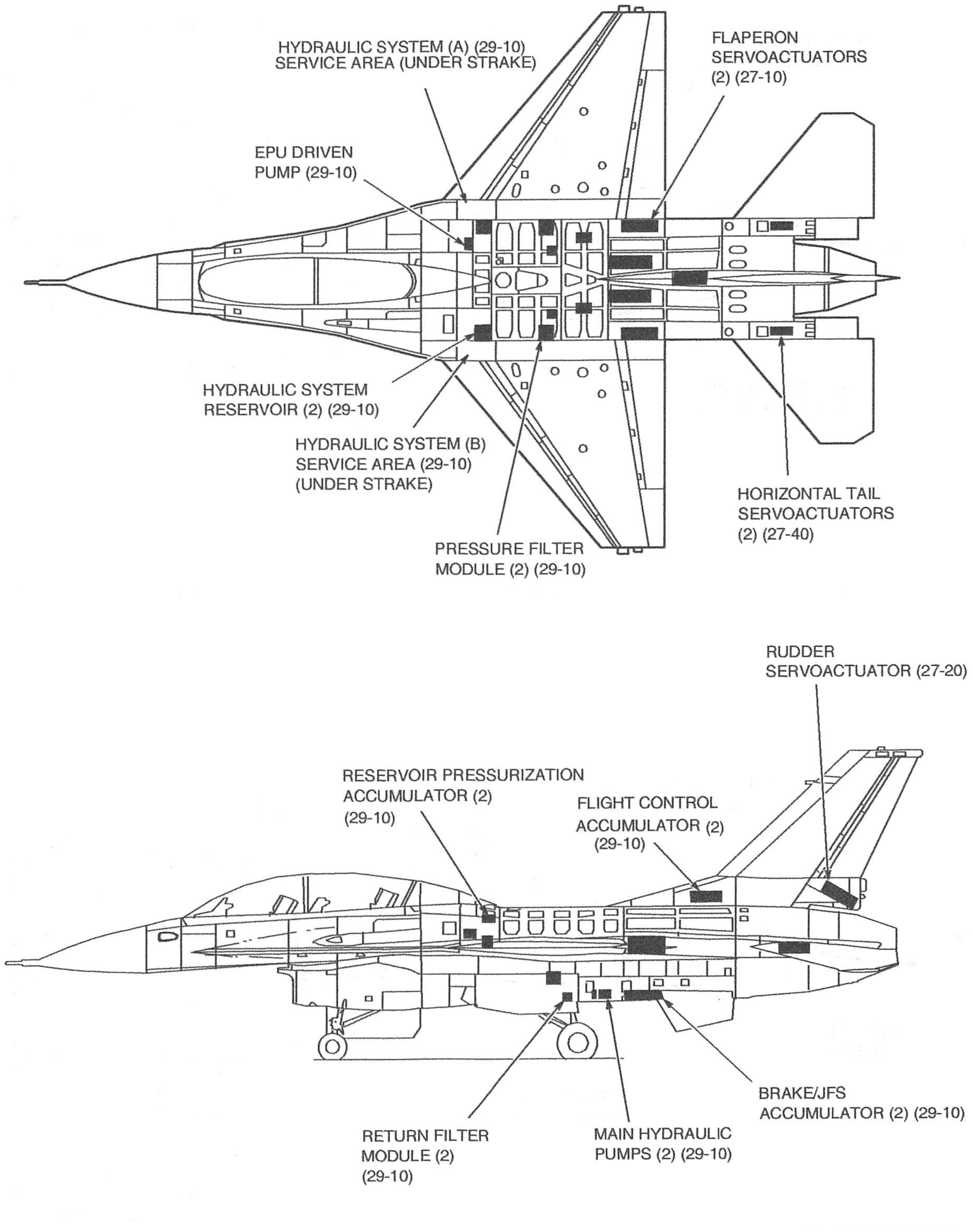


Figure 00-31. Hydraulic System Components Location.

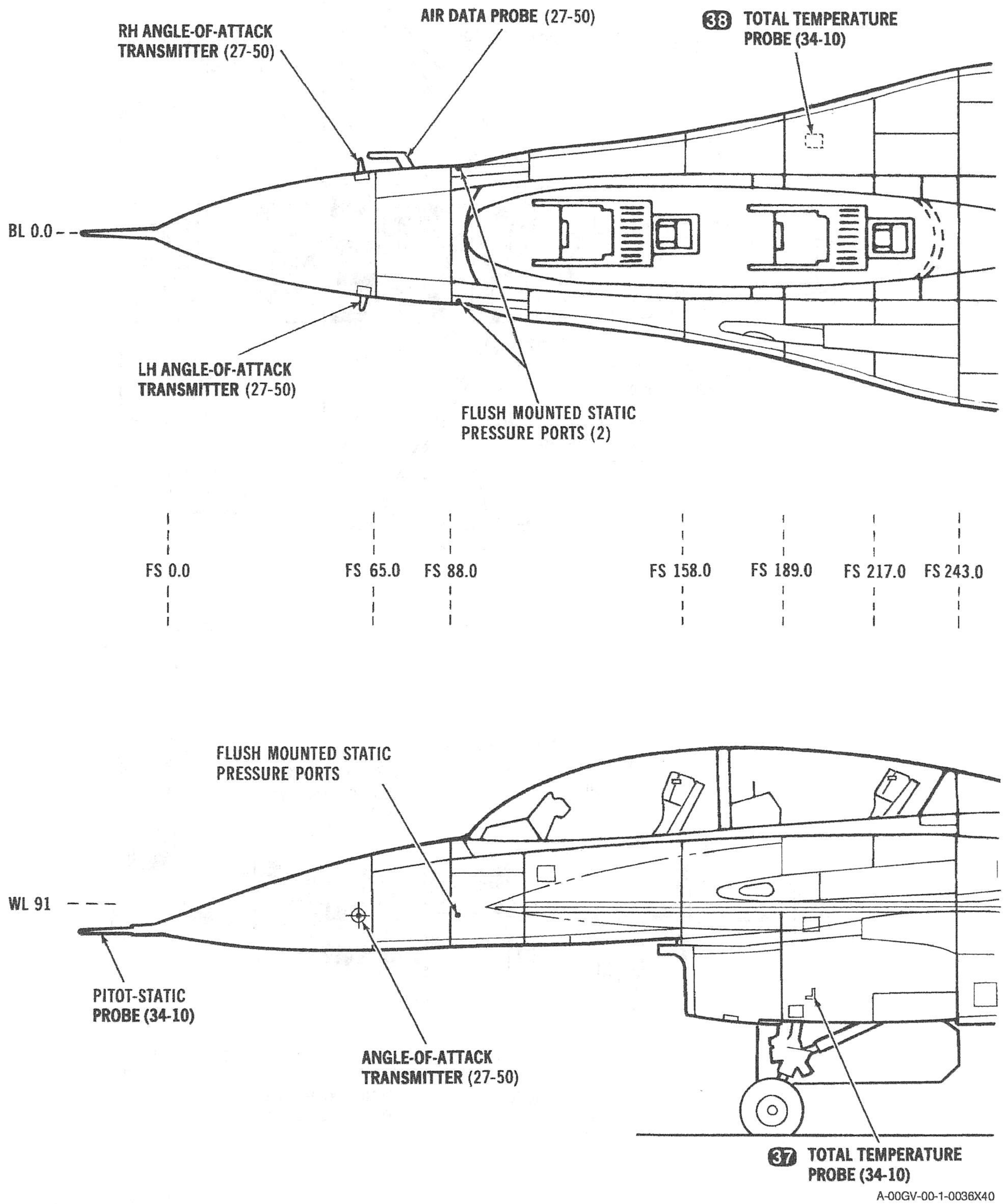


Figure 00-32. Air Data Probes.

00.13 DATA RECORDING FLIGHT LOADS (31-00).

The purpose of the data recording flight loads system is to obtain time history records of the stresses exerted on critical areas of the airframe. The data recording flight loads system consists of the following subsystem:

a. 13 flight loads recorder and mechanical strain recorder (31-30)

b. ADF standard flight data recorder system (31-30)

00.13.1 13 Flight Loads Recorder and Mechanical Strain Recorder System (31-30). The purpose of the flight loads recorder system is to obtain time history records of the stresses exerted on critical areas of the airframe. The system consists of a signal data recorder (not in 3), a signal data converter-multiplexer, flight control surface transducer, strain gage amplifier, landing gear relays, and a throttle position potentiometer assembly (Figure 00-33). The mechanical strain recorder consists of a cassette recorder assembly and a protective guard. These are installed on bulkhead (FS 325.80) in the right main landing gear wheel well (Figure 00-34).

00.13.2 ADF Standard Flight Data Recorder System (31-30). The standard flight data recorder system (Figure 00-33) consists of a Signal Data Recorder Reproducer (SDRR), Flight Data Memory Unit (FDMU), five surface position transducers, and an axial accelerometer transducer. The five surface position transducers and the axial accelerometer transducer supply aircraft data to the SDRR which is then stored in the FDMU. The standard flight data recorder system monitors time, flight information, aircraft attitude, pilot stick inputs, control surface positions, fuel quantity, throttle position, engine data, and certain cockpit switch positions, caution and warning lights. Additional information, in digital form, is available for acquisition on the 1553B avionics Multiplex Bus (MUX BUS). Analog an discrete signals not available on the mux bus are converted to digital form by a converter in the SDRR. All digital data is stored in nonvolatile memory in the FDMU. The FDMU is protected from aircraft fire and/or crash by armor-steel and insulation. It typically contains approximately the last 8 to 15 minutes of flight data, and retains this data in nonvolatile memory following a crash.

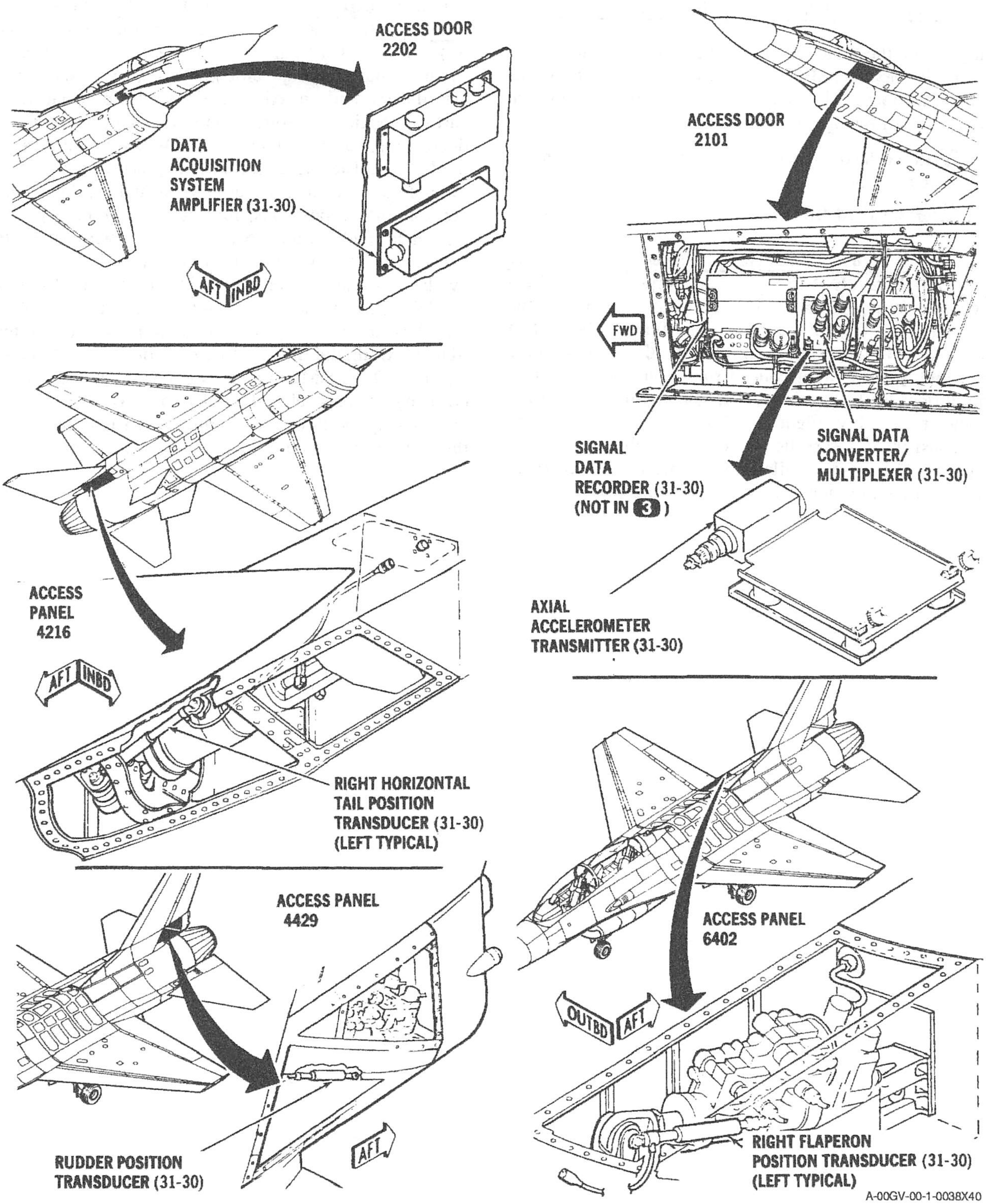


Figure 00-33. Flight Data Loads Recording System Major Components.

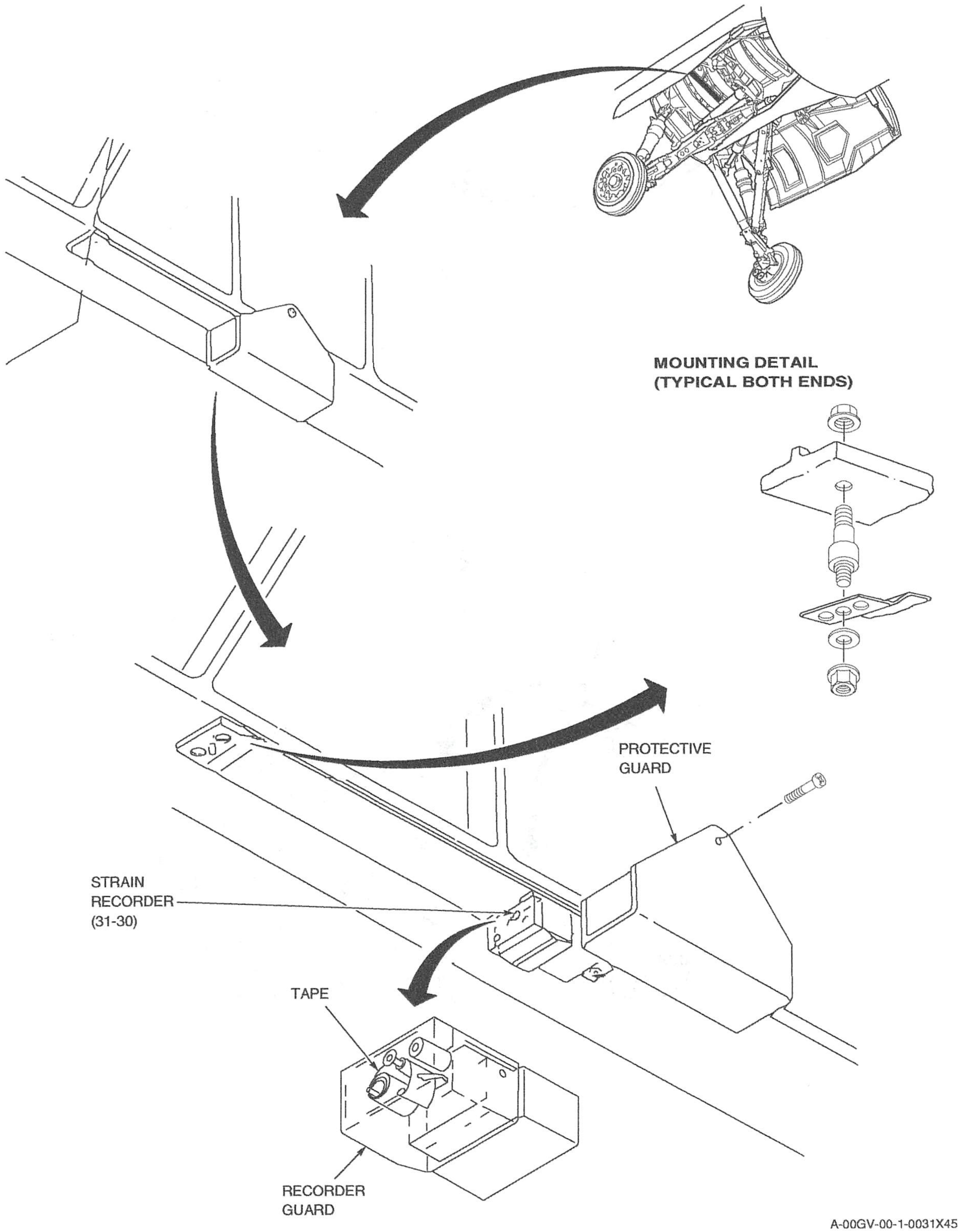


Figure 00-34. Mechanical Strain Recorder.

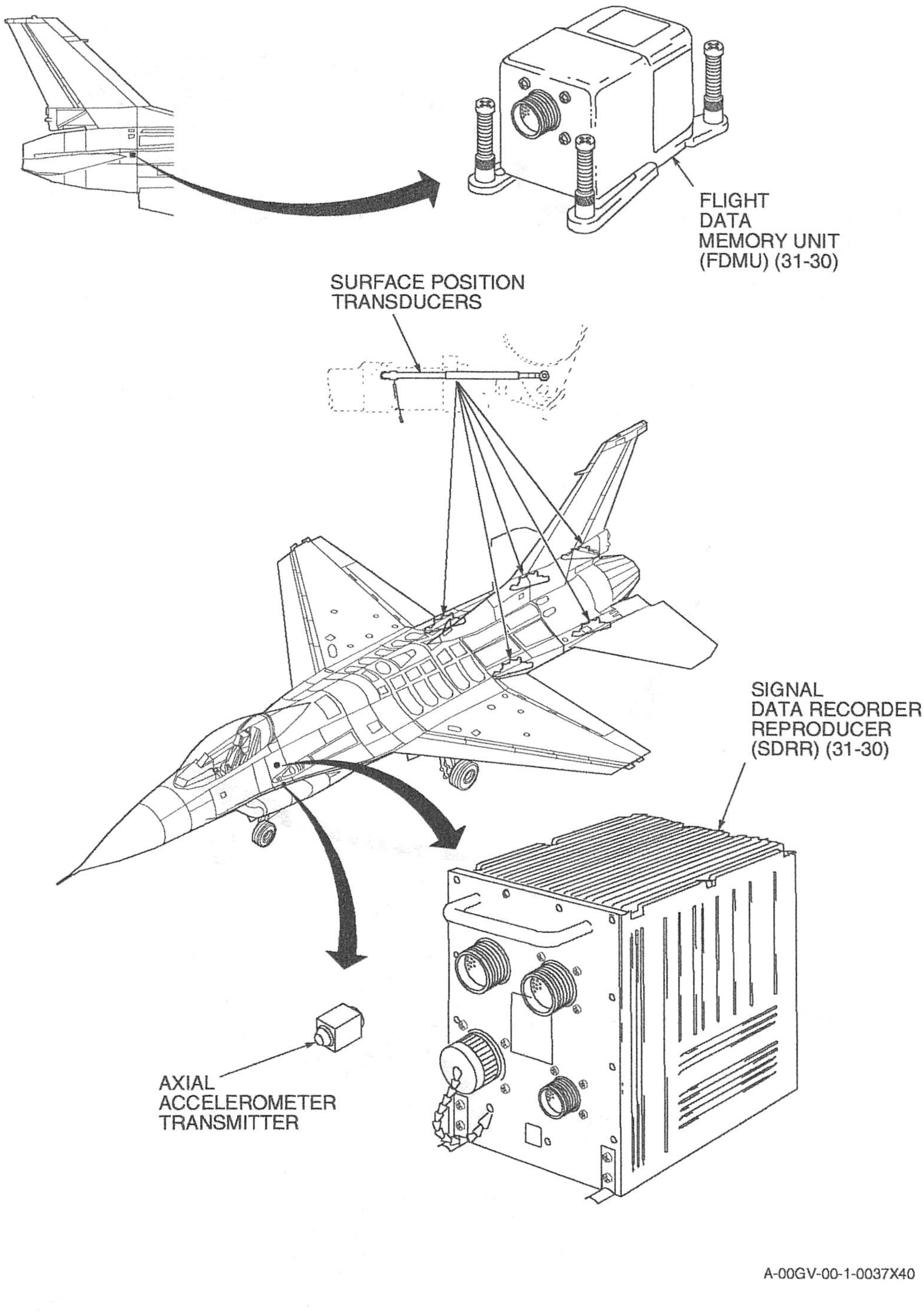


Figure 00-35. Standard Flight Data Recorder System Components Location ADF.

00.14 LANDING GEAR SYSTEM (32-00).

The aircraft is equipped with a conventional, fuselage-mounted, tricycle landing gear system (Figure 00-36) consisting of a single-wheel nose landing gear and two single-wheel main landing gears. Landing energy is absorbed by the main and nose gear shock struts. Normal retraction and extension of the landing gear system is electrically controlled and hydraulically actuated. Emergency landing gear extension is mechanically controlled by an alternate landing gear control and pneumatically actuated by a stored pneumatic system. A pneumatically actuated arresting hook is provided for emergency arrestment. Controls and indicators for the gear system are located on the landing gear panel at the forward and aft cockpit left auxiliary consoles (Figure 00-37). The landing gear system consists of the following subsystems:

a. Extension and Retraction (32-30)
b. Wheels and Brakes (32-40)
c. Steering (32-50)
d. Position and Warning (32-60)
e. Arresting Hook (32-90)

00.14.1 Extension and Retraction (32-30). The extension and retraction subsystem provides the means for raising and lowering the landing gear. Sequence valves control landing gear and door operations to prevent interference during all extension and retraction cycles.

00.14.2 Brake and Antiskid System (32-40). The brake and antiskid system is a brake-by-wire system integrated with an antiskid system. Brake application is through the rudder pedals and uses two independent electrical channels. Dual normal brake actuation is provided through two hydraulically independent sets of actuating pistons in each brake. Brakes may be applied singly or simultaneously. The main landing gear wheels are automatically braked before retraction. An electrically controlled parking brake, independent of the rudder pedal controls, is provided for taxi and parking operation. The parking brake can also be used for supplemental emergency unmetered brake application if normal braking by pedal is totally inoperative. The antiskid system is a modulated-type system incorporating touchdown protection to prevent premature brake application and a warning system to signal the pilot during flight if a failure exists that would make the antiskid function inoperative.

00.14.3 Steering (32-50). Power steering authority of 32 degrees left and right, operated through the rudder pedals, is provided (Figure 00-37). The nose landing gear axle incorporates recess-type towing provisions for attachment of a universal-type tow bar. A quick-disconnect at the scissor link apex is provided so that the nosewheel can be turned beyond the steerable range during towing.

00.14.4 Position and Warning (32-60). Position sensing and warning indication is provided through limit switches on the gear struts actuating the WHEELS position (down and locked) lights on the landing gear control panel and TO/LAND CONFIG warning light on the glareshield (Figure 00-37).

00.14.5 ❺ Drag Chute and Arresting Hook System (32-80, -90). A drag chute system is provided to reduce landing rollout distance. The chute is located in an aerodynamic fairing below the rudder and aft of the rudder servoactuator. Deployment and release is accomplished through a two-position switch, located on the armament panel in the cockpit, a hydraulic actuator, an accumulator, and a control valve. Storage of the chute is in a bag that closes the aft opening of the aerodynamic fairing. After deployment, the storage bag remains with the aircraft. During landing, the maximum deployment speed is 170 KIAS. In flight, the chute can be deployed at speeds below approximately 190 KIAS and remain attached to the aircraft unless released by the pilot. ❶ ❻ The arresting hook subsystem (Figure 00-36) provides a means of stopping the aircraft on the runway during an emergency landing by hook engagement with a barrier cable.

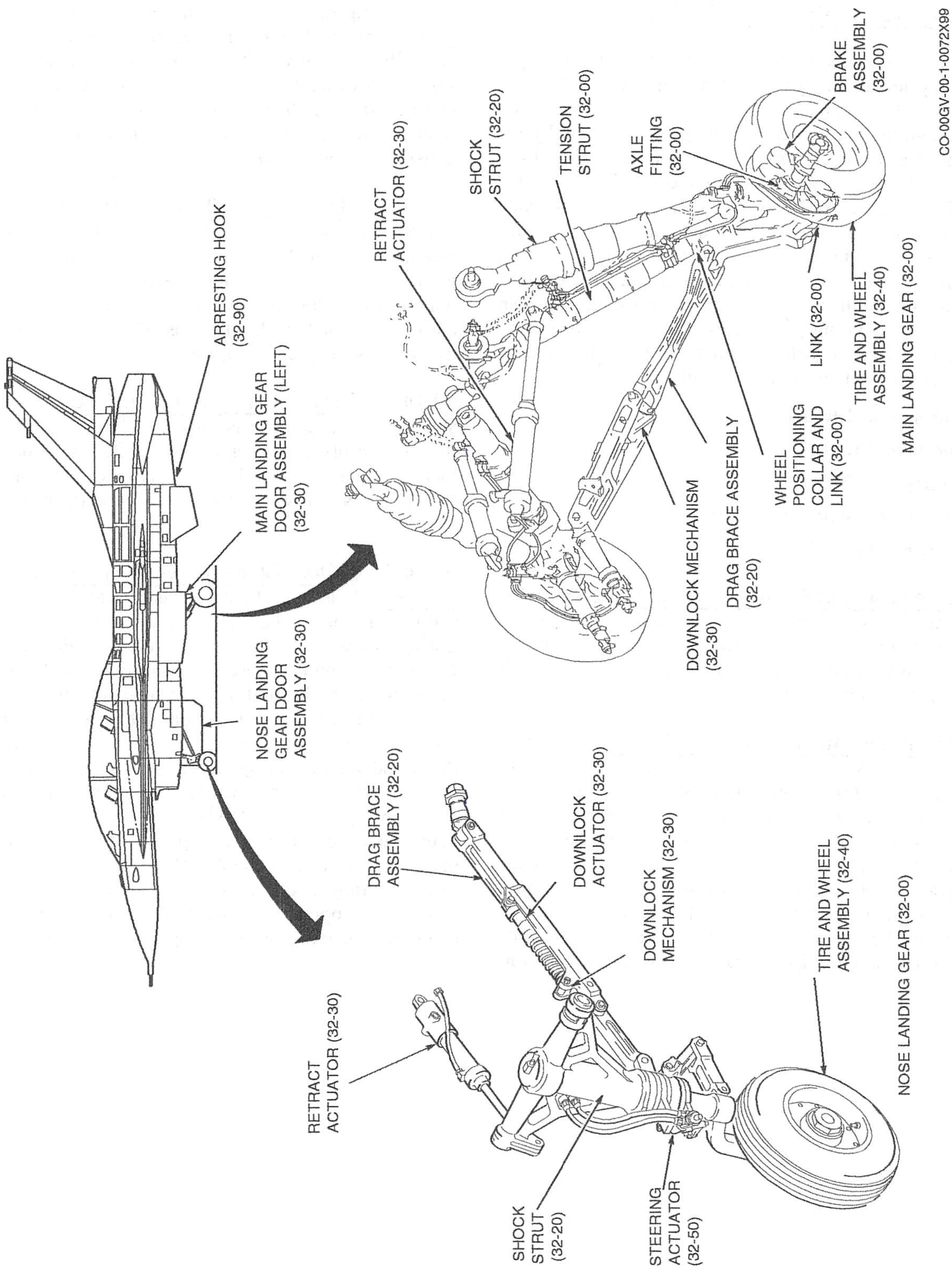


Figure 00-36. Landing Gear System General Arrangement.

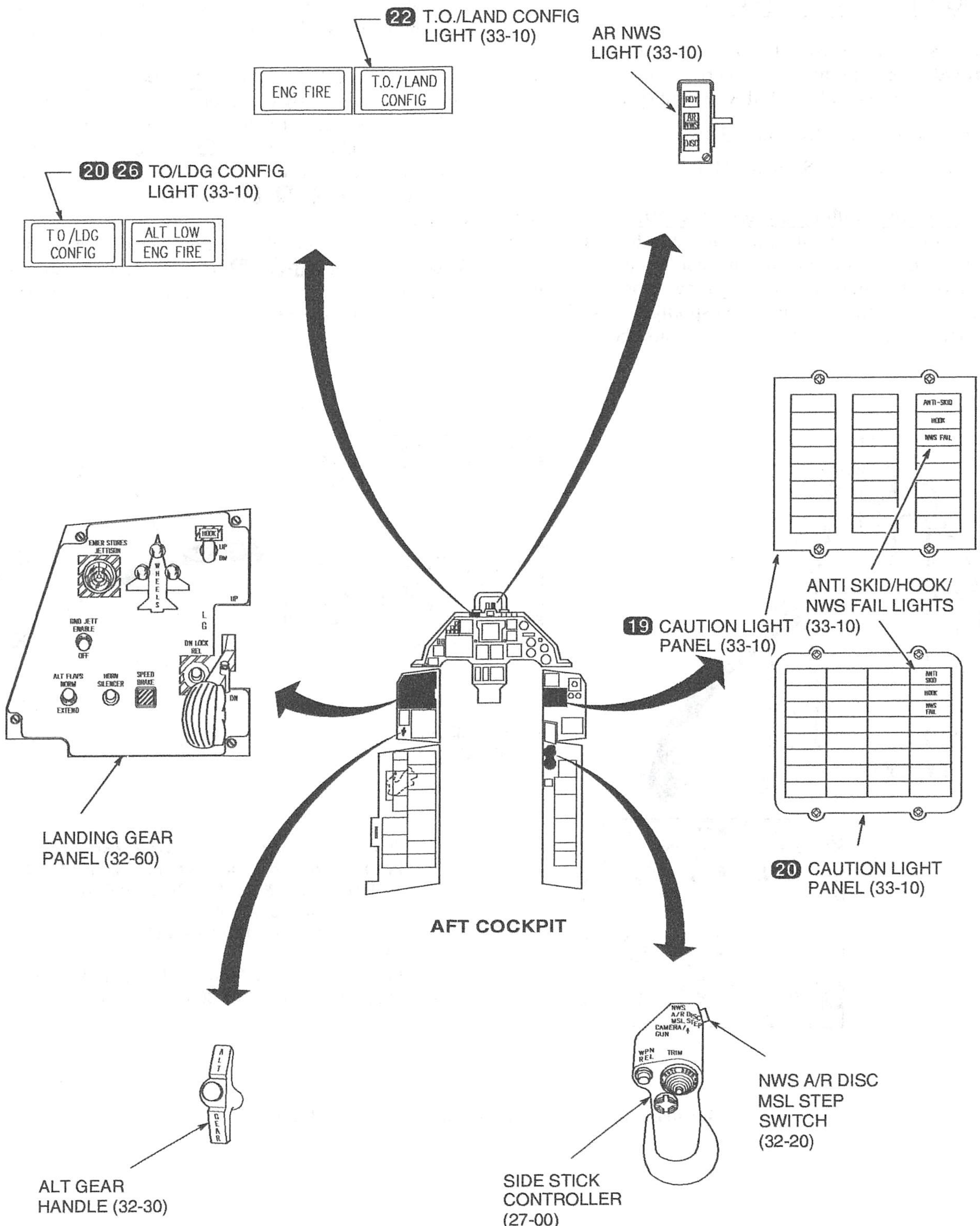


Figure 00-37. Landing Gear System Cockpit Controls and Indicators.

00.15 LIGHTING SYSTEM (33-00).

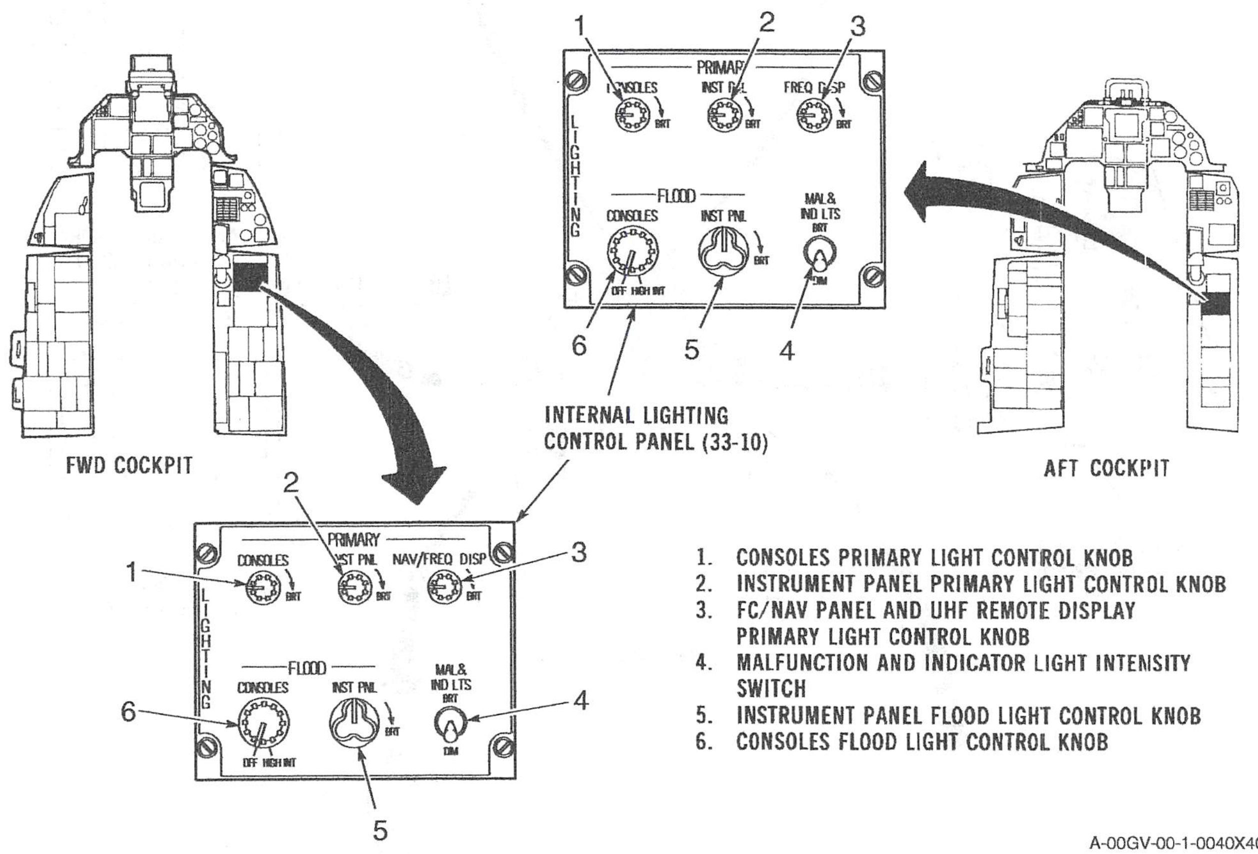
The lighting system consists of those items and components which provide for external and internal illumination. The lighting system consists of the following subsystems:

a. Internal Lighting System (33-10)

b. External Lighting System (33-40)

00.15.1 Internal Lighting System (33-10). The internal lighting system provides illumination inside of the cockpit and consists of lights for instrument and control panel primary lighting, flood and high intensity lighting, display, caution-warning-advisory, and a utility flood/spotlight. The interior lighting control panel (Figure 00-38) contains the power and intensity controls for the primary (panel edge or internal) and secondary (flood) lighting systems for the cockpit.

00.15.2 External Lighting System (33-40). The external lighting system provides illumination outside of the aircraft and includes lights for anticollision, position, formation, air refueling, landing, taxi, and ADF 14 air-to-air identification (ID light). All exterior light controls except the landing and taxi lights and ADF 14 the ID light are on the exterior lighting control panel (Figure 00-39). The landing and taxi lights switch is on the landing gear control panel in the forward cockpit. ADF 14 The ID light switch is located on the miscellaneous panel. The location of all the exterior lights is shown in Figure 00-40.



1. CONSOLES PRIMARY LIGHT CONTROL KNOB
2. INSTRUMENT PANEL PRIMARY LIGHT CONTROL KNOB
3. FC/NAV PANEL AND UHF REMOTE DISPLAY PRIMARY LIGHT CONTROL KNOB
4. MALFUNCTION AND INDICATOR LIGHT INTENSITY SWITCH
5. INSTRUMENT PANEL FLOOD LIGHT CONTROL KNOB
6. CONSOLES FLOOD LIGHT CONTROL KNOB

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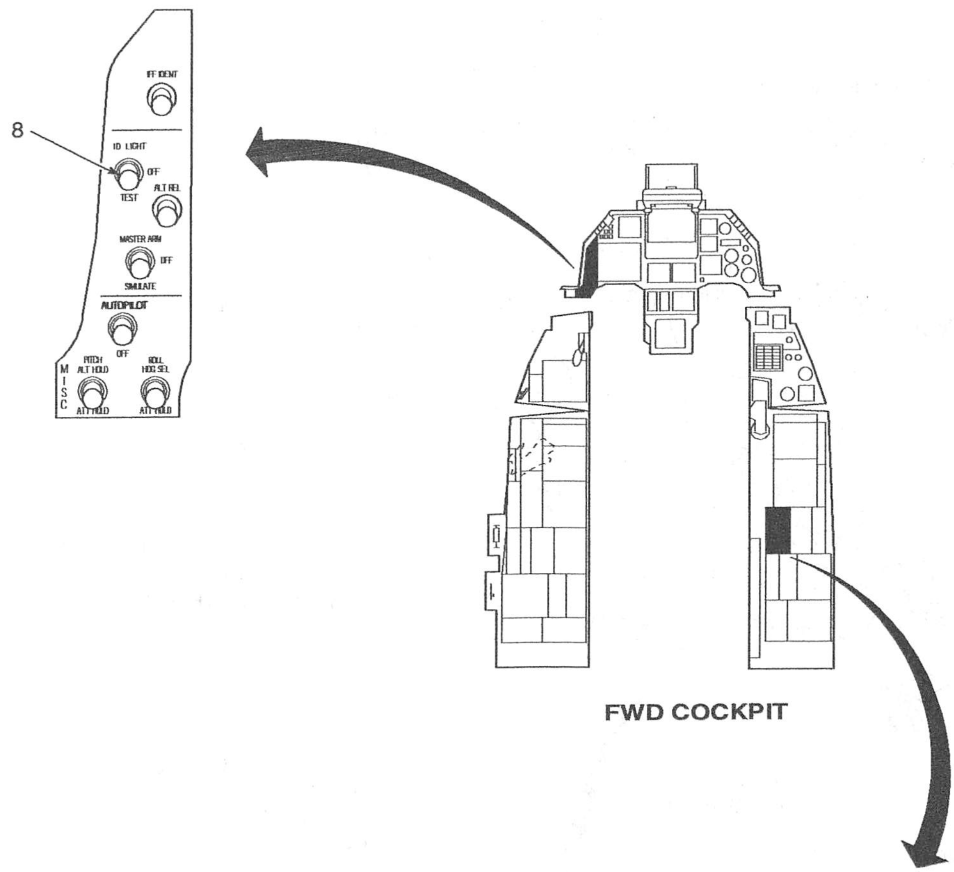
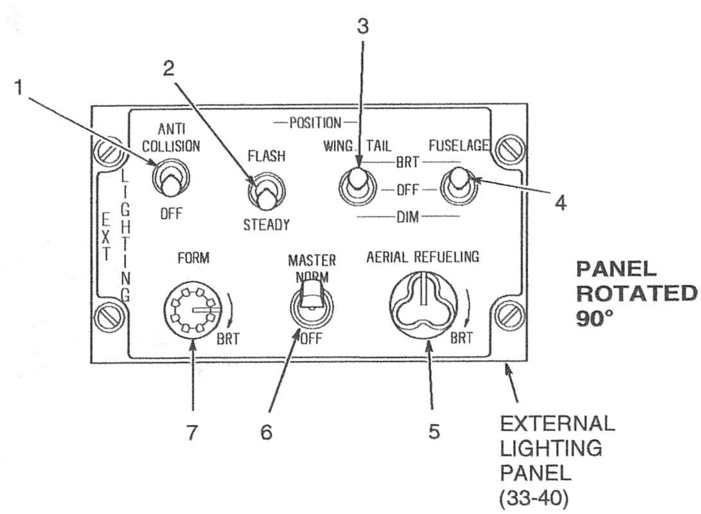
Figure 00-38. Internal Lighting Control Panel.



1. ANTI-COLLISION LIGHT SWITCH
2. FLASH/STEADY SWITCH
3. WING/TAIL LIGHT SWITCH
4. FUSELAGE LIGHT SWITCH
5. AERIAL REFUELING LIGHT CONTROL KNOB
6. MASTER LIGHT SWITCH
7. FORMATION LIGHT CONTROL KNOB
8. ADF ID LIGHT SWITCH



PANEL ROTATED 90°

EXTERNAL LIGHTING PANEL (33-40)

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Figure 00-39. External Lighting Control Panel.

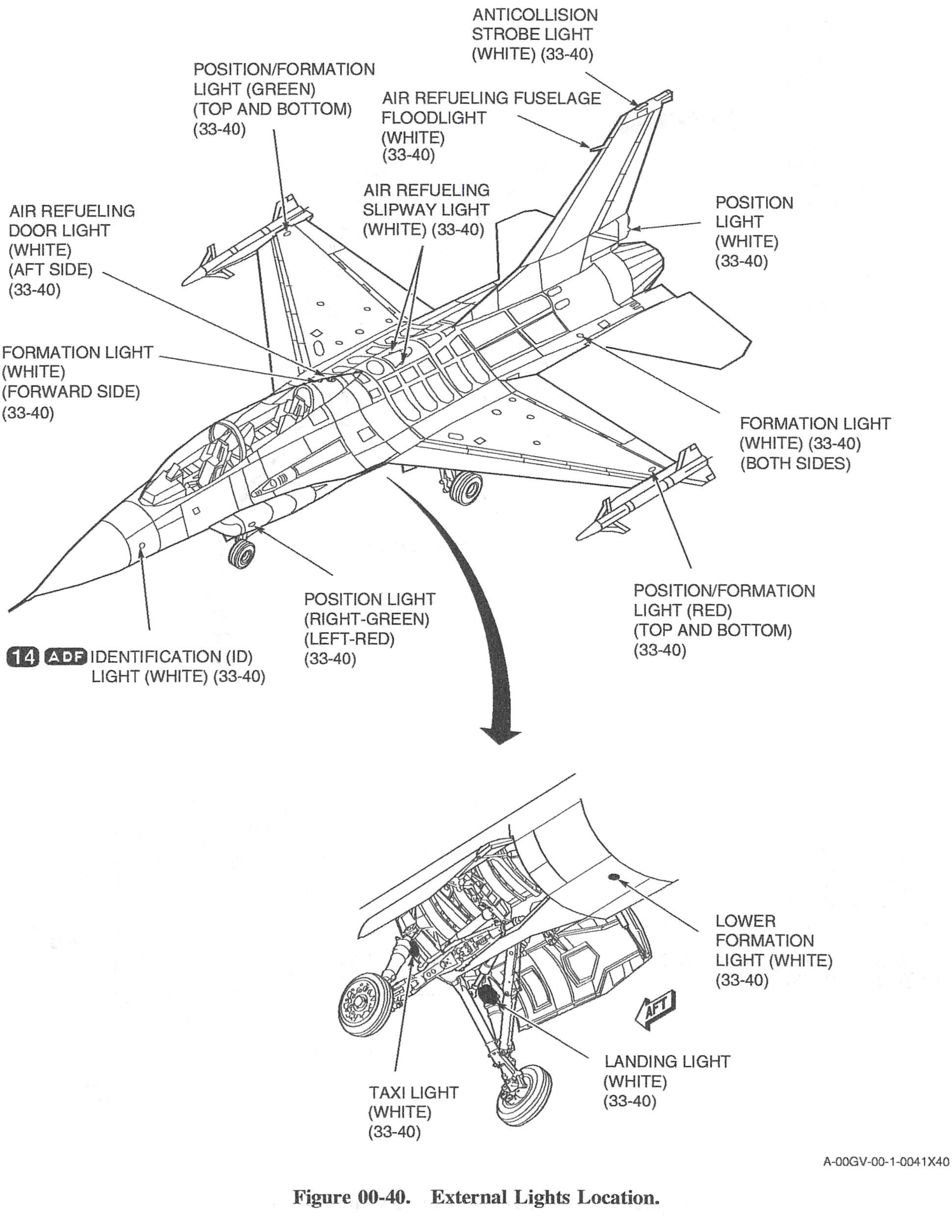

Figure 00-40. External Lights Location.

00.16 NAVIGATION SYSTEM (34-00).

The navigation system provides for enroute and terminal navigation functions, as well as sensor data for weapon delivery functions. An air-to-ground and ADF an air-to-air function is also included. The navigation system consists of the Inertial Navigation System (INS), Tactical Air Navigation (TACAN) system, Central Air Data Computer (CADC), navigation instruments, Instrument Landing System (ILS), and 13 air-to-ground IFF system or ADF air-to-air and air-to-ground AIFF system. The cockpit controls and indicators for the navigation system are shown in Figure 00-41. The components location for the navigation system are in Figure 00-44.

00.16.1 Flight Environment Data (34-10). The flight environment data subsystem senses external air pressures and temperature; displays aircraft airspeed, mach number, vertical velocity, altitude, and angle of attack; and computes air data values for use by other systems. The air data system consists of the air data probe, two angle-of-sideslip ports, pitot-static probe, CADC, A one/ B two Airspeed/Mach Indicator (AMI), A one/ B two Vertical Velocity Indicator (VVI)s, total temperature probe, A one/ B two altimeters, A one/B two AOA indicators, A one/ B two AOA indexers, and associated hoses, tubing, and wiring. Locations of components are shown in Figure 00-44.

00.16.2 Attitude and Direction (34-20). The Attitude Director Indicator (ADI) displays aircraft pitch and roll attitude. The Standby Attitude Indicator (SAI) is used as a backup for an ADI failure. Other indications on the ADI include rate-of-turn, sideslip, pitch trim, and warning flags. The Horizontal Situation Indicator (HSI) displays aircraft magnetic heading, distance and TO-FROM information when in TACAN mode, relative bearing and deviation from navigation stations, and a deviation warning flag. Other instruments used include the altimeter, AOA indicator/indexer, AMI, magnetic compass, and VVI.

00.16.3 Instrument Landing System (34-30). The AN/ARN-108 ILS provides glide path, localizer guidance, and marker beacon information for guiding the aircraft to a safe landing. This information is displayed on the ADI and the HSI. The ILS consists of a receiver unit, a control panel, a combination glide slope/localizer antenna, and a marker beacon antenna. The receiver unit contains the glide slope, localizer, and marker beacon receivers. The receivers supply vertical and horizontal deviations from the selected approach station, glide slope direction, and warning and marker beacon visual information. Aural signals, for identification of the localizer, are provided through the interphone system. The glide slope/localizer antenna is mounted in the lower surface of the nose radome, and the marker beacon is mounted in the lower surface of the forward fuselage. Antenna locations are shown in Figure 00-17. Aircraft 24 do not contain ILS receiver, receiver mount, or ILS control panel.

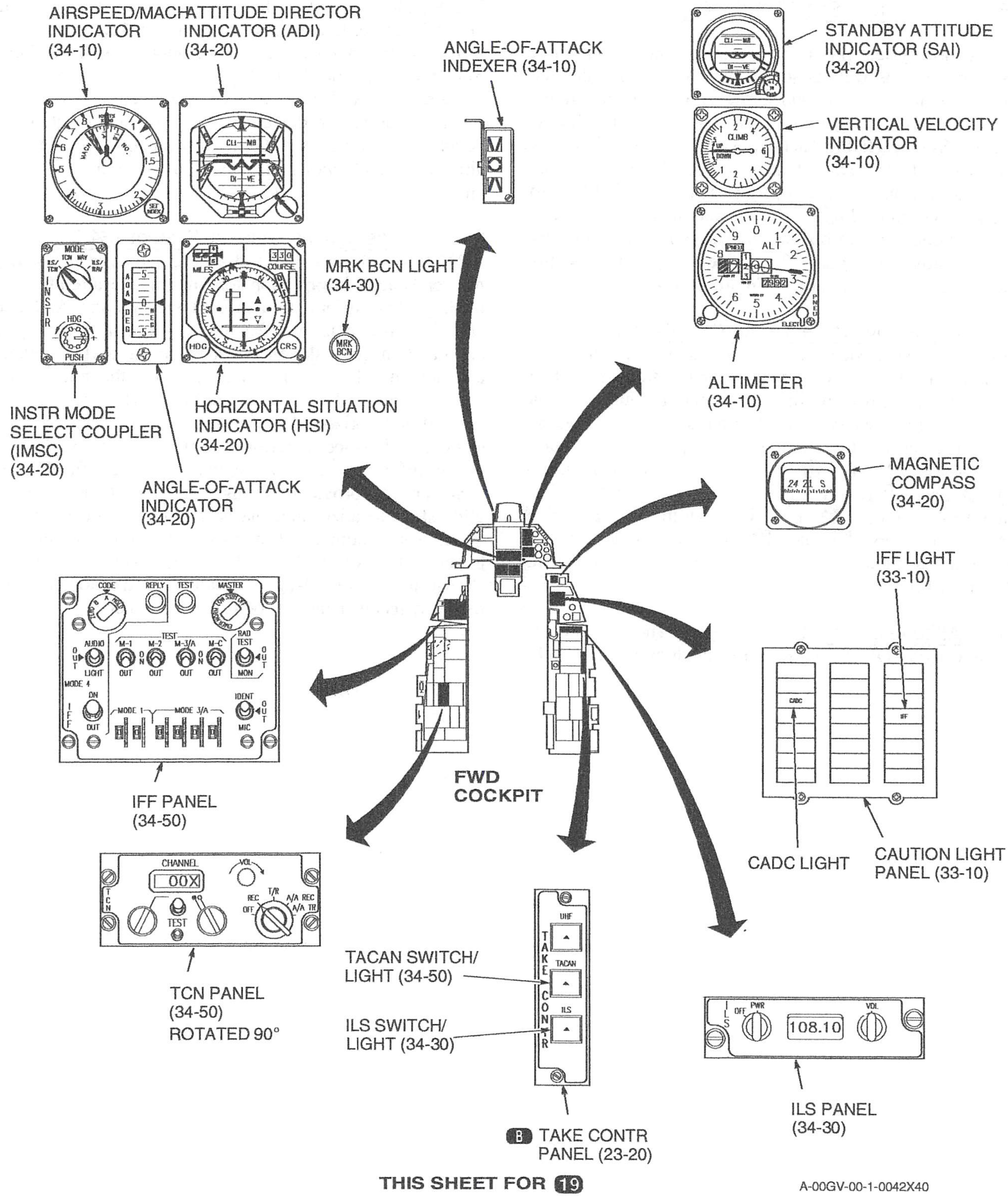

Figure 00-41. Navigation System Cockpit Controls and Indicators. (Sheet 1 of 2)

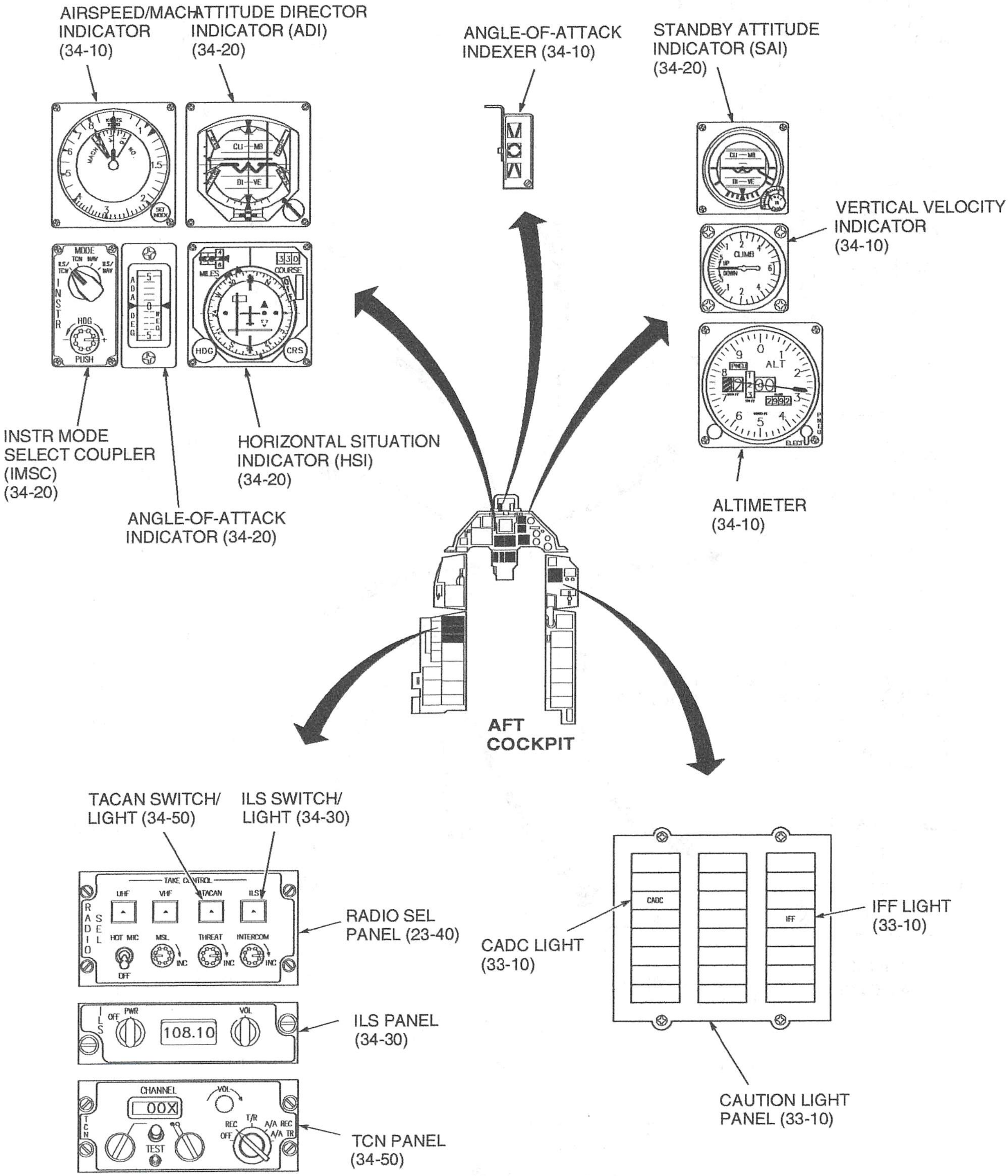

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Figure 00-41. Navigation System Cockpit Controls and Indicators. (Sheet 2)

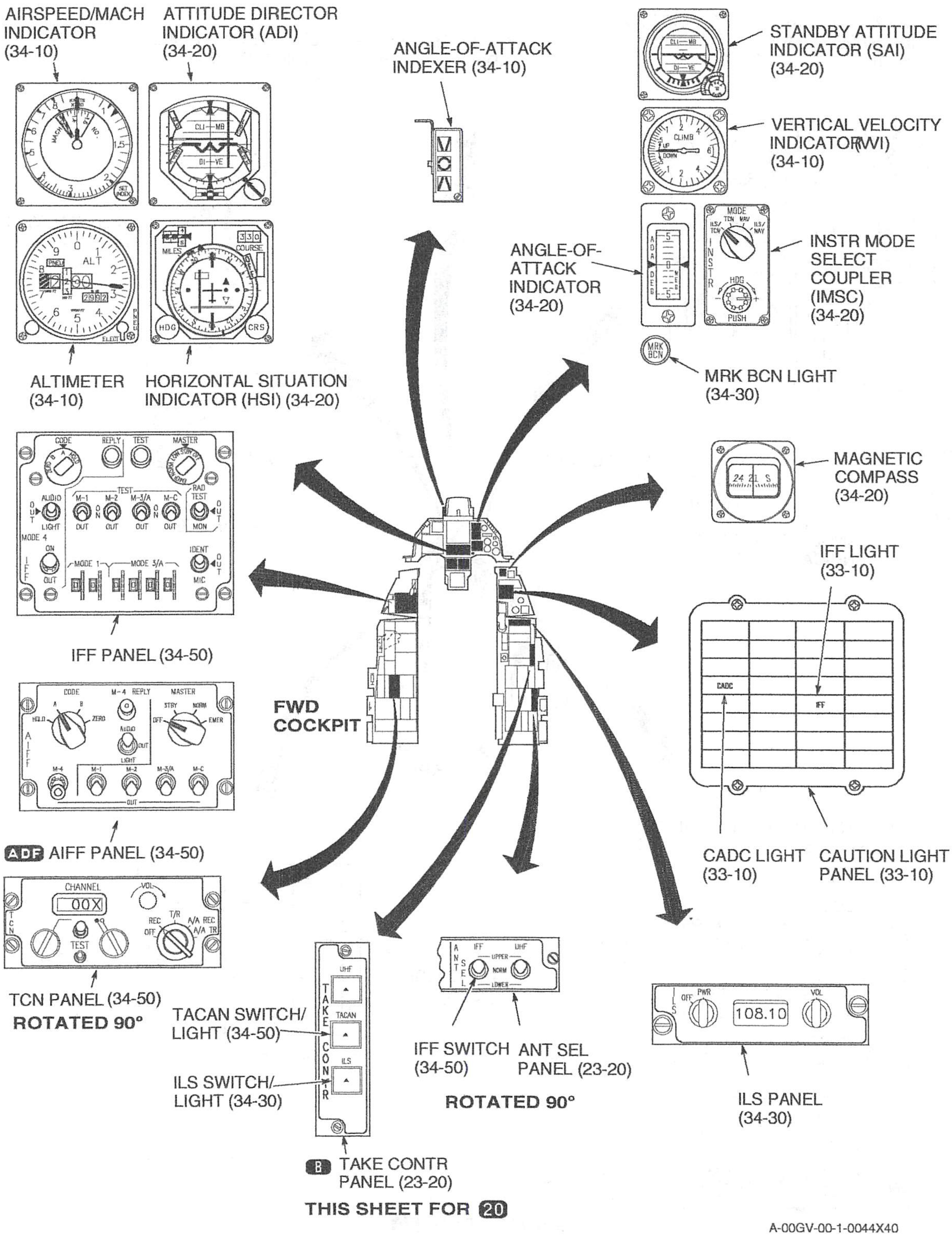

Figure 00-42. Navigation System Cockpit Controls and Indicators.

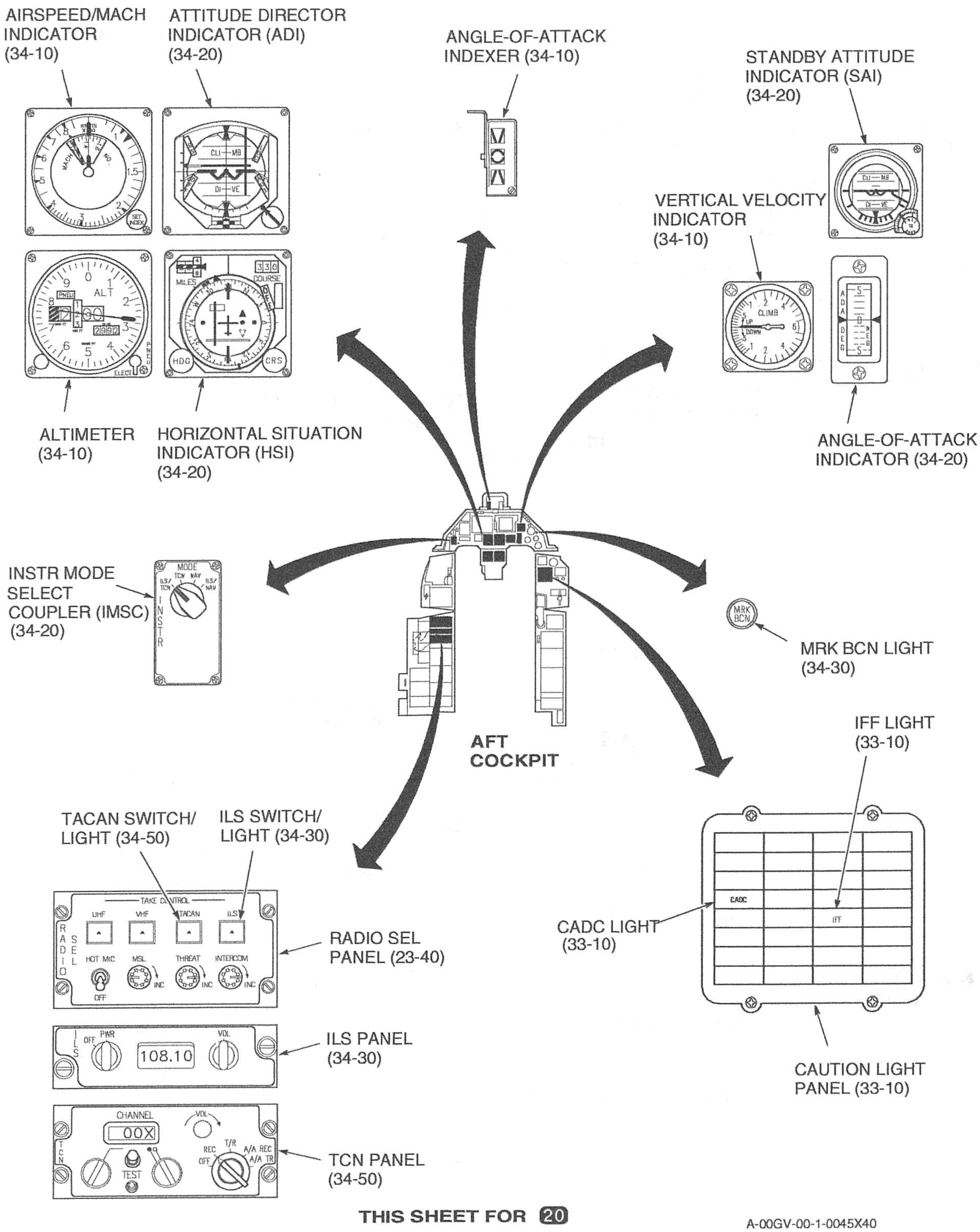

Figure 00-43. Navigation System Cockpit Controls and Indicators.

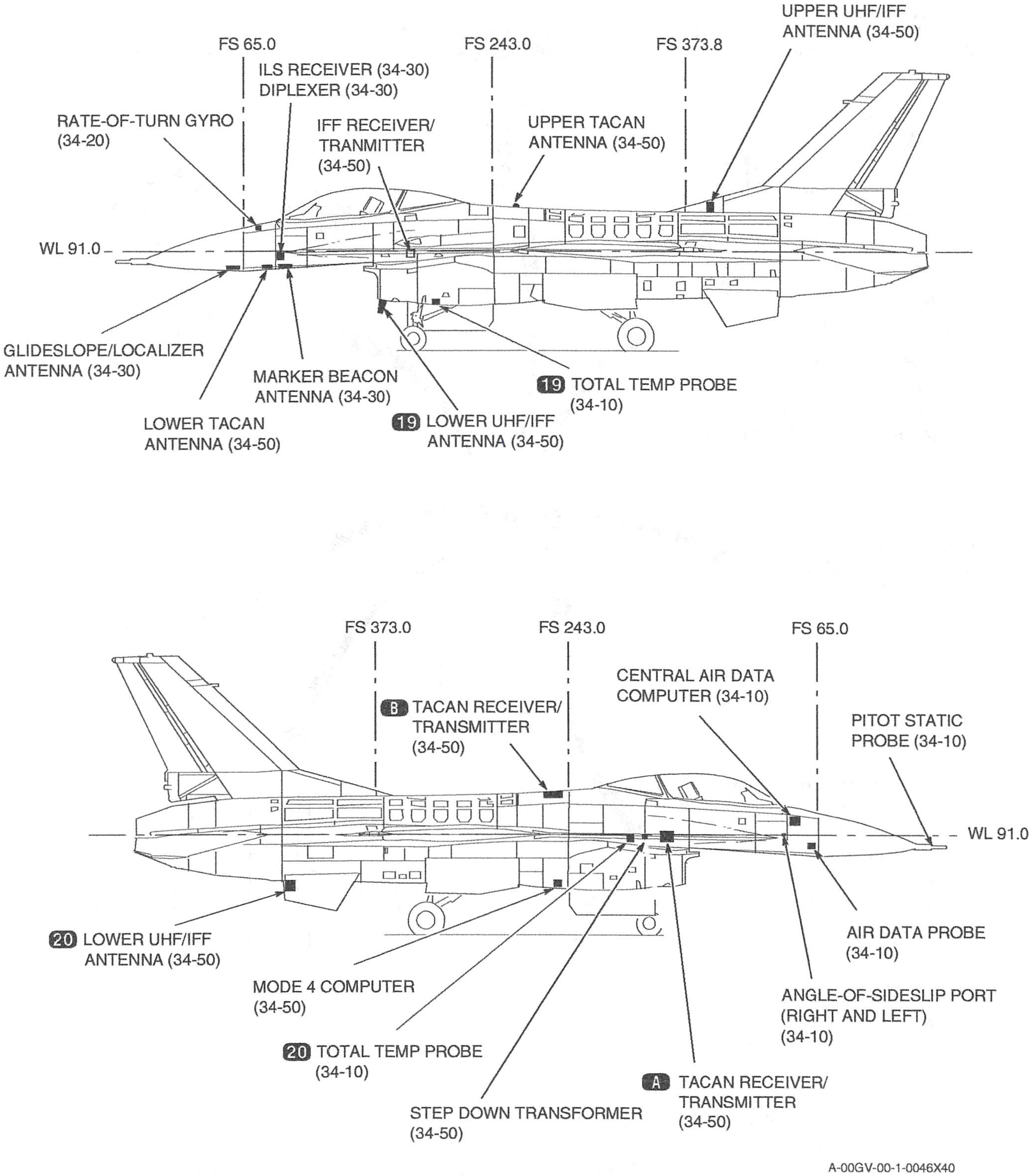

Figure 00-44. Navigation System Components Location.

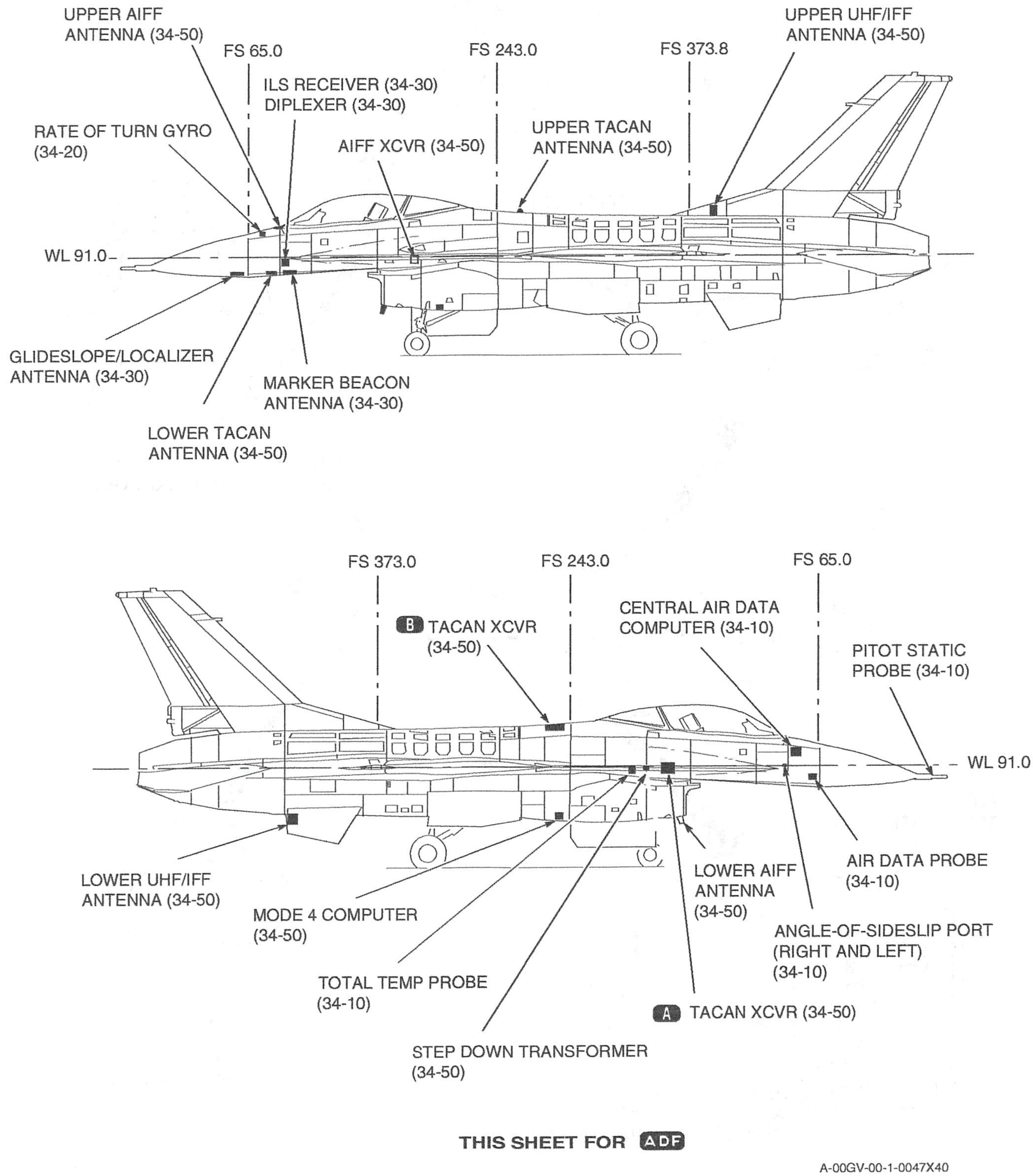

Figure 00-45. Navigation System Components Location.

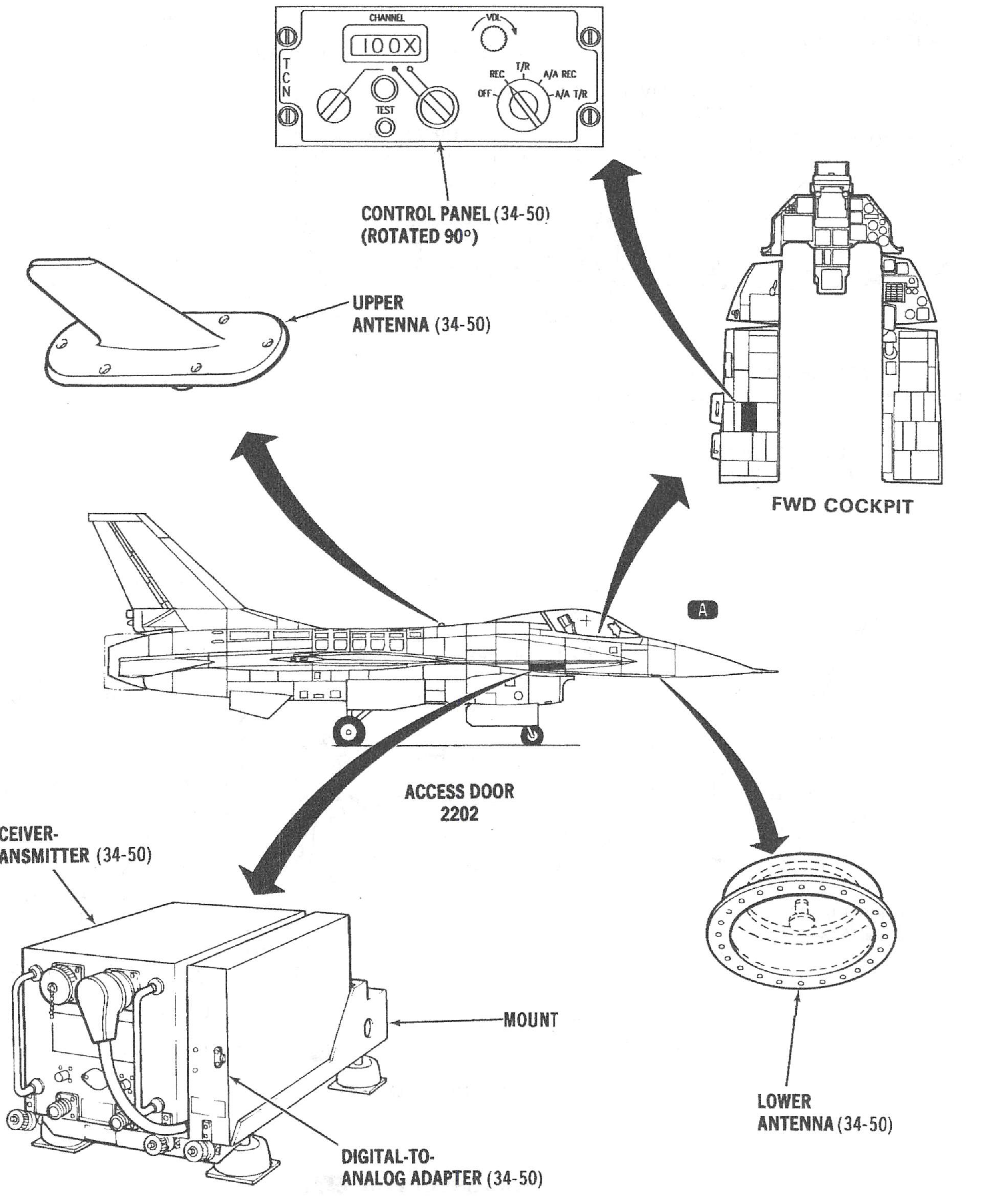

Figure 00-46. TACAN System Components Locations.

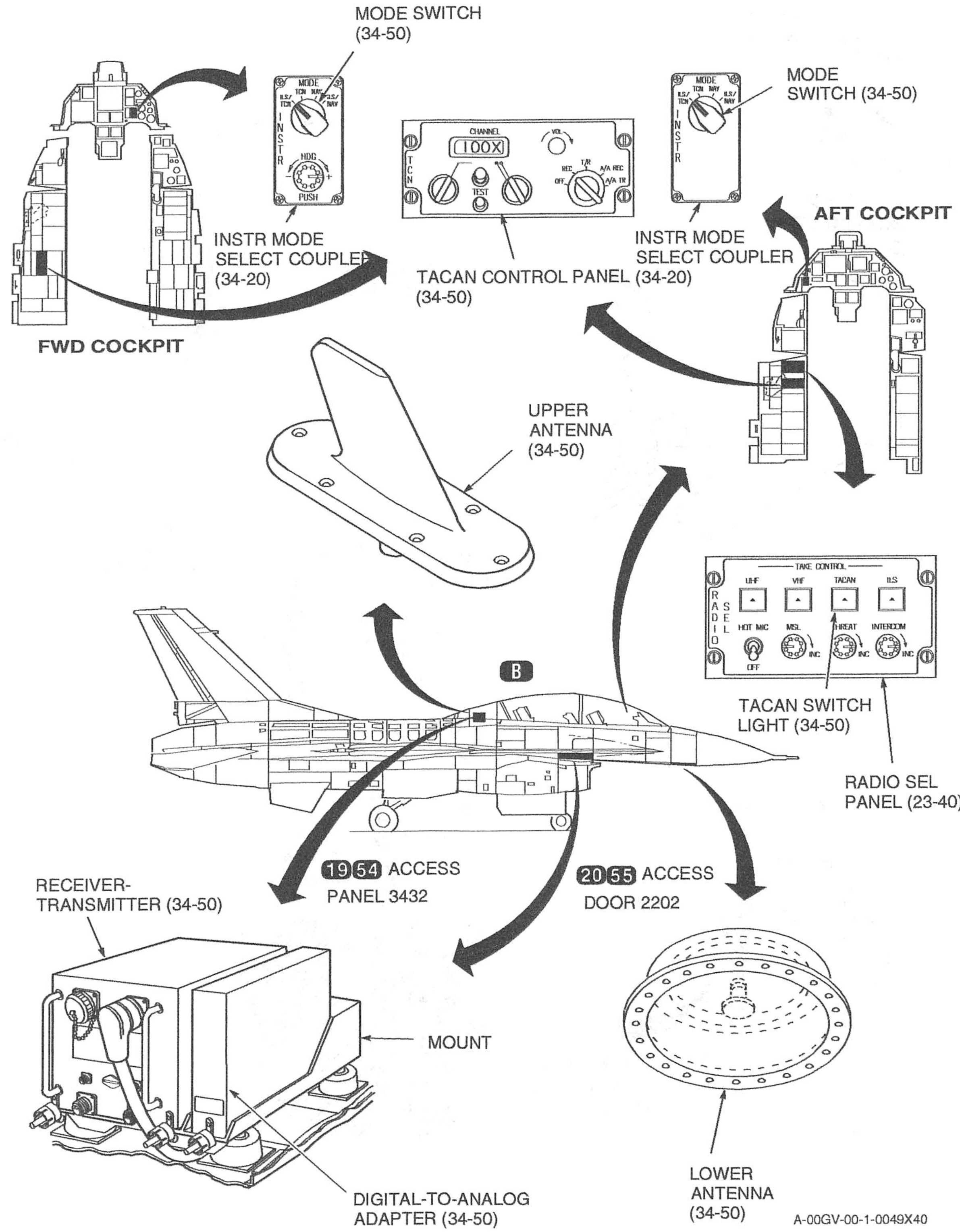

Figure 00-47. TACAN System Components Locations.

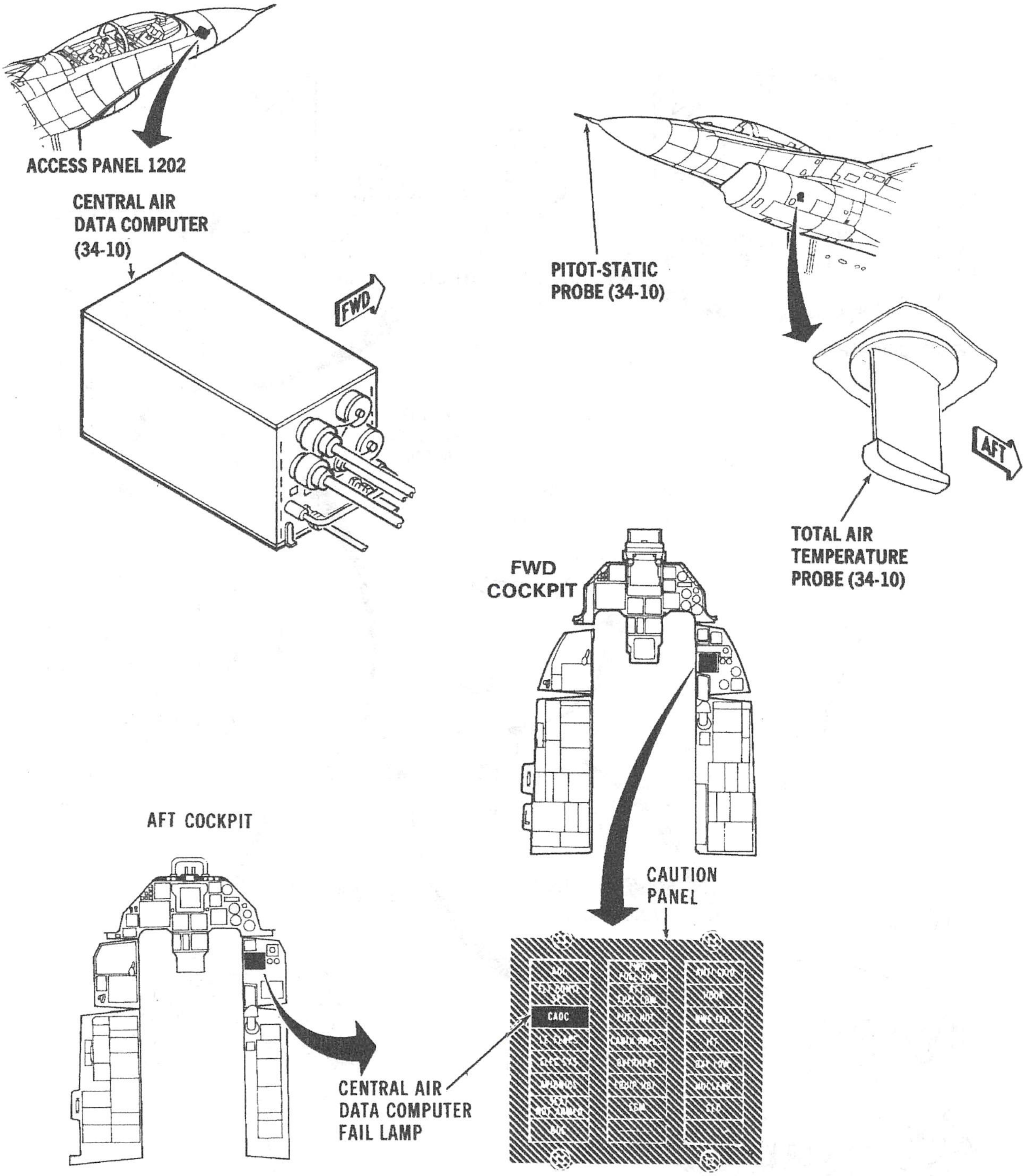

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Figure 00-48. CADC System Components Locations.

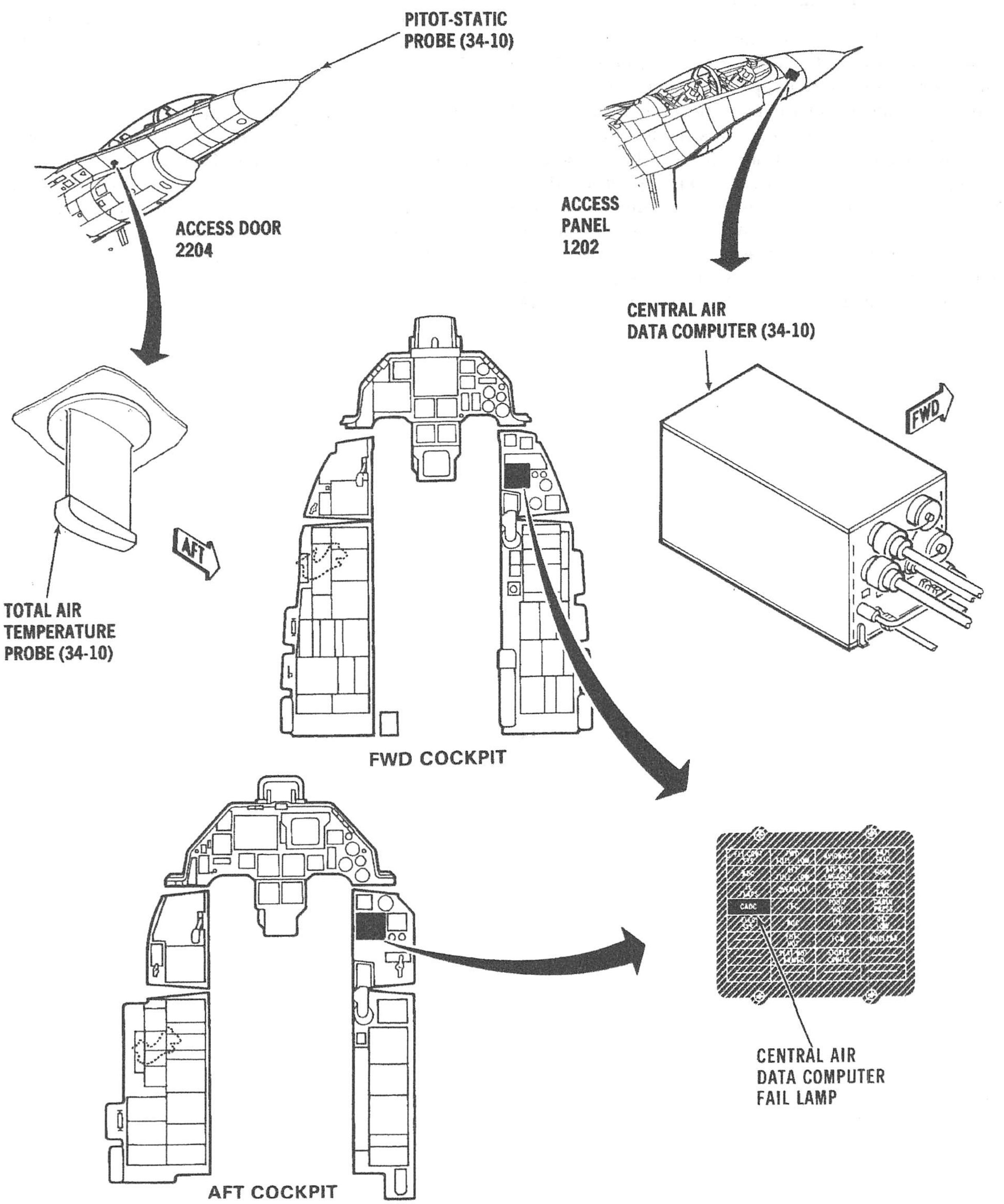

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Figure 00-49. CADC System Components Locations.

00.17 OXYGEN SYSTEM (35-00).

The oxygen system provides breathing oxygen for life support during normal flight conditions. The oxygen is provided by a 5-liter liquid oxygen converter capable of supplying sufficient oxygen for the intended mission profile of the aircraft. An emergency supply of gaseous oxygen is mounted on the seat and is actuated automatically during ejection. The emergency oxygen supply may also be actuated manually during flight. The oxygen system components include a 5-liter liquid oxygen converter, heat exchanger, low pressure switch and indicator light, oxygen flow indicator, oxygen quantity indicator, emergency oxygen bottle, oxygen regulator, oxygen mask, on-off valve and the associated check valves, quick-disconnects, fill and vent valves, relief valves, and plumbing. Oxygen system controls and indicators are shown in Figure 00-50 and system components location is shown in Figure 00-52.

00.17.1 Crew (35-10). The crew subsystem utilizes a liquid oxygen converting system to supply the crewmember with normal breathing oxygen. Cockpit controls (Figure 00-50) enable the crewmember to regulate the distribution of the oxygen supply. An oxygen low pressure switch and a panel-mounted test switch (Figure 00-50) are also provided to verify functional accuracy of the quantity monitoring and warning circuitry.

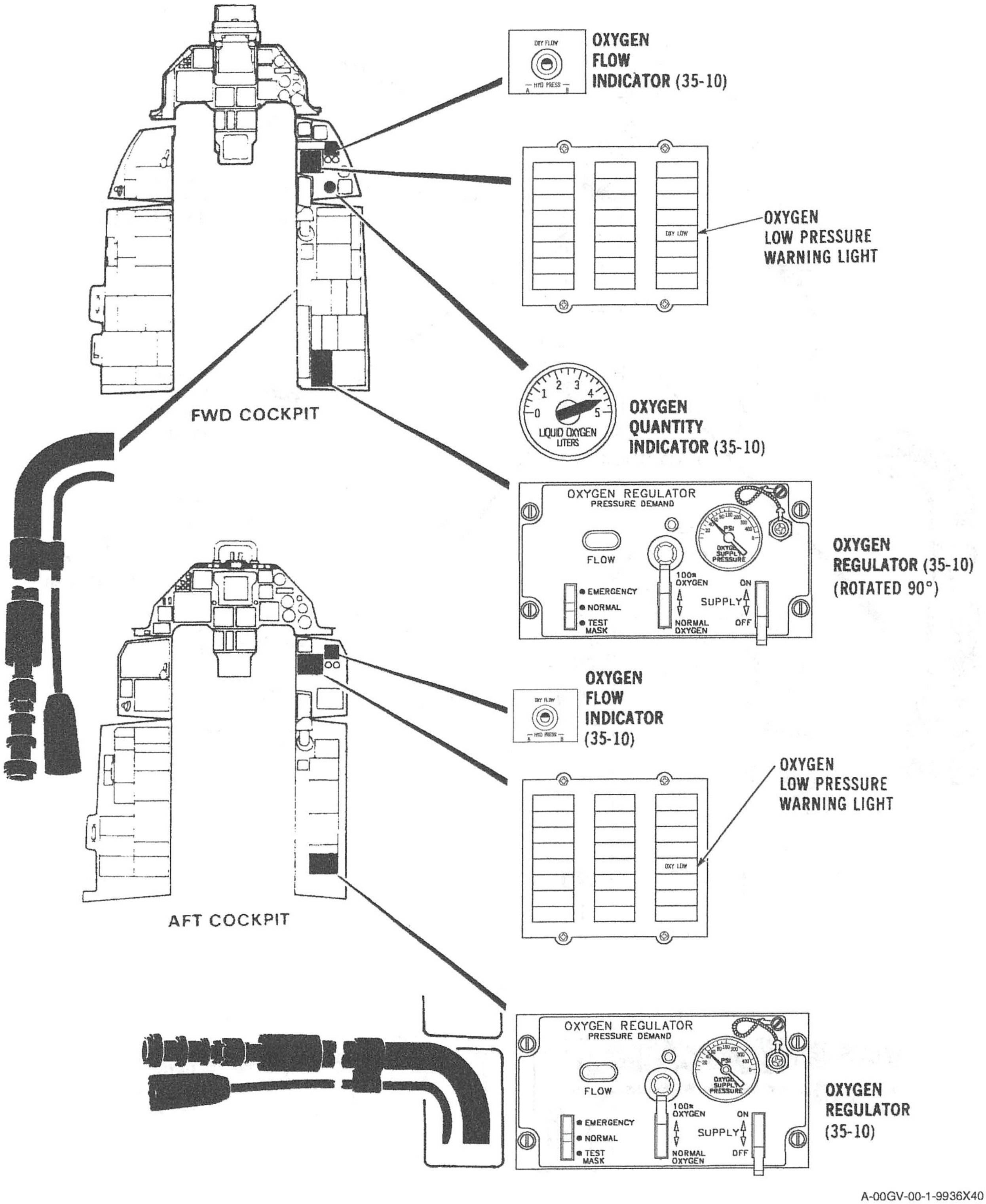


Figure 00-50. Oxygen Cockpit Controls and Indicators 19.

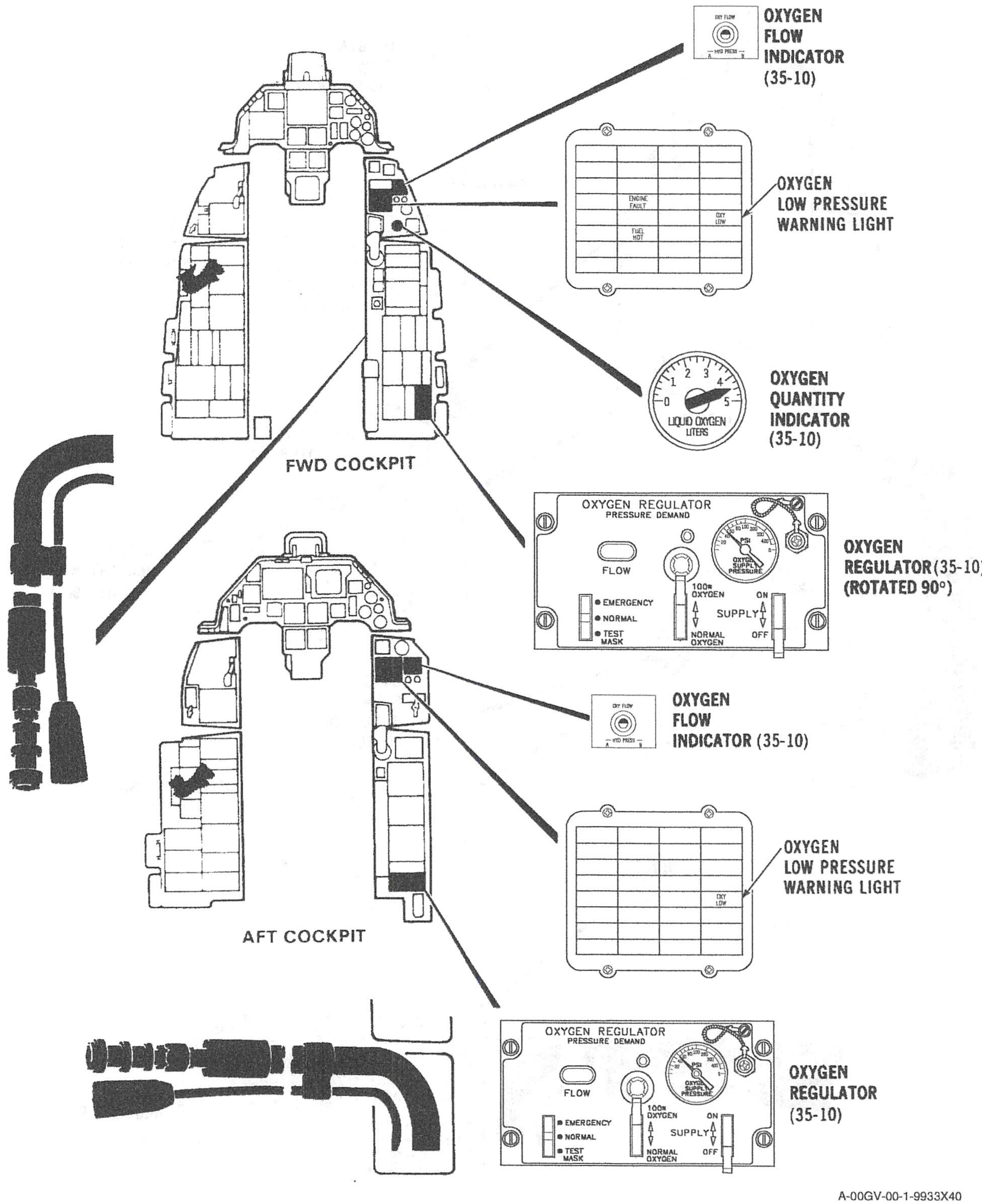


Figure 00-51. Oxygen Cockpit Controls and Indicators 20.

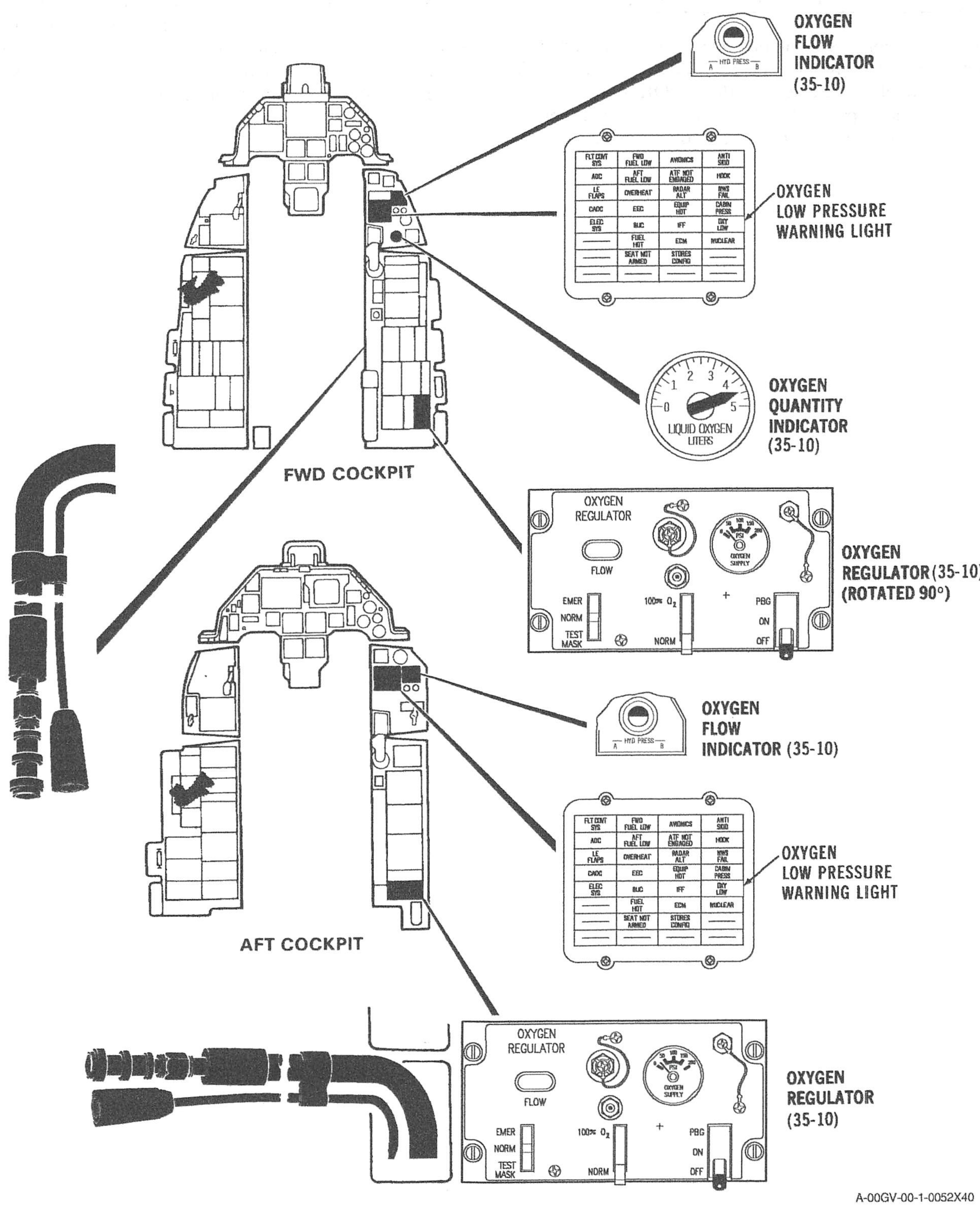


Figure 00-52. Oxygen System Components Location.

00.18 PNEUMATIC SUPPLY SYSTEM (36-00).

The pneumatic supply system provides compressed nitrogen as a primary power source for extension of the arresting hook. The arresting hook is actuated by the HOOK switch on the landing gear control panel (Figure 00-53). Also, as an emergency power source, all landing gear doors may be opened and the nose landing gear actuated by the ALT GEAR handle on the left auxiliary console. The pneumatic supply subsystem includes a reservoir, manifold, filter assembly, charging valve, relief valve, and pressure gage. Pneumatic supply system cockpit controls are shown in Figure 00-53 and components location is shown in Figure 00-54.

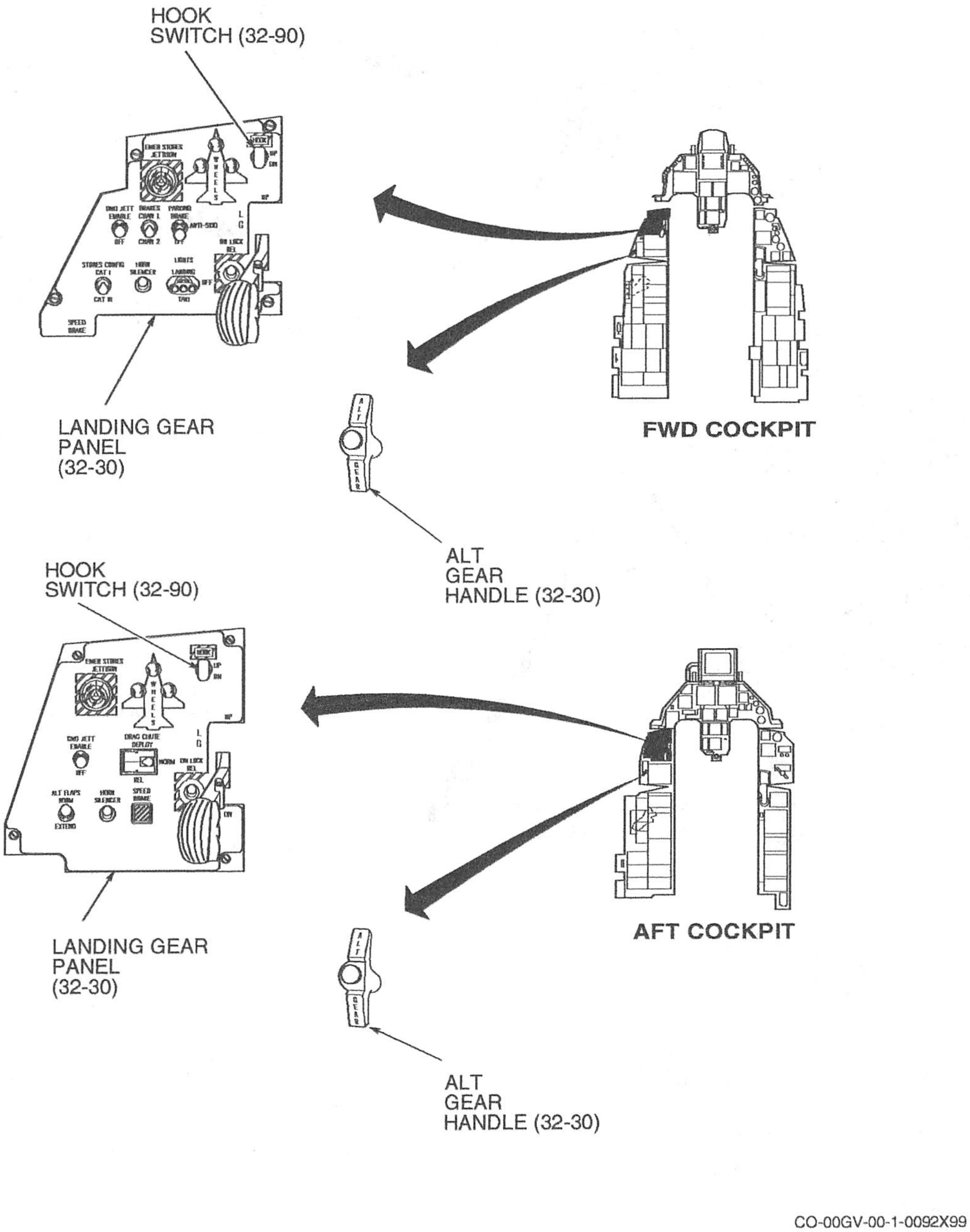


Figure 00-53. Pneumatic Supply System Cockpit Controls.

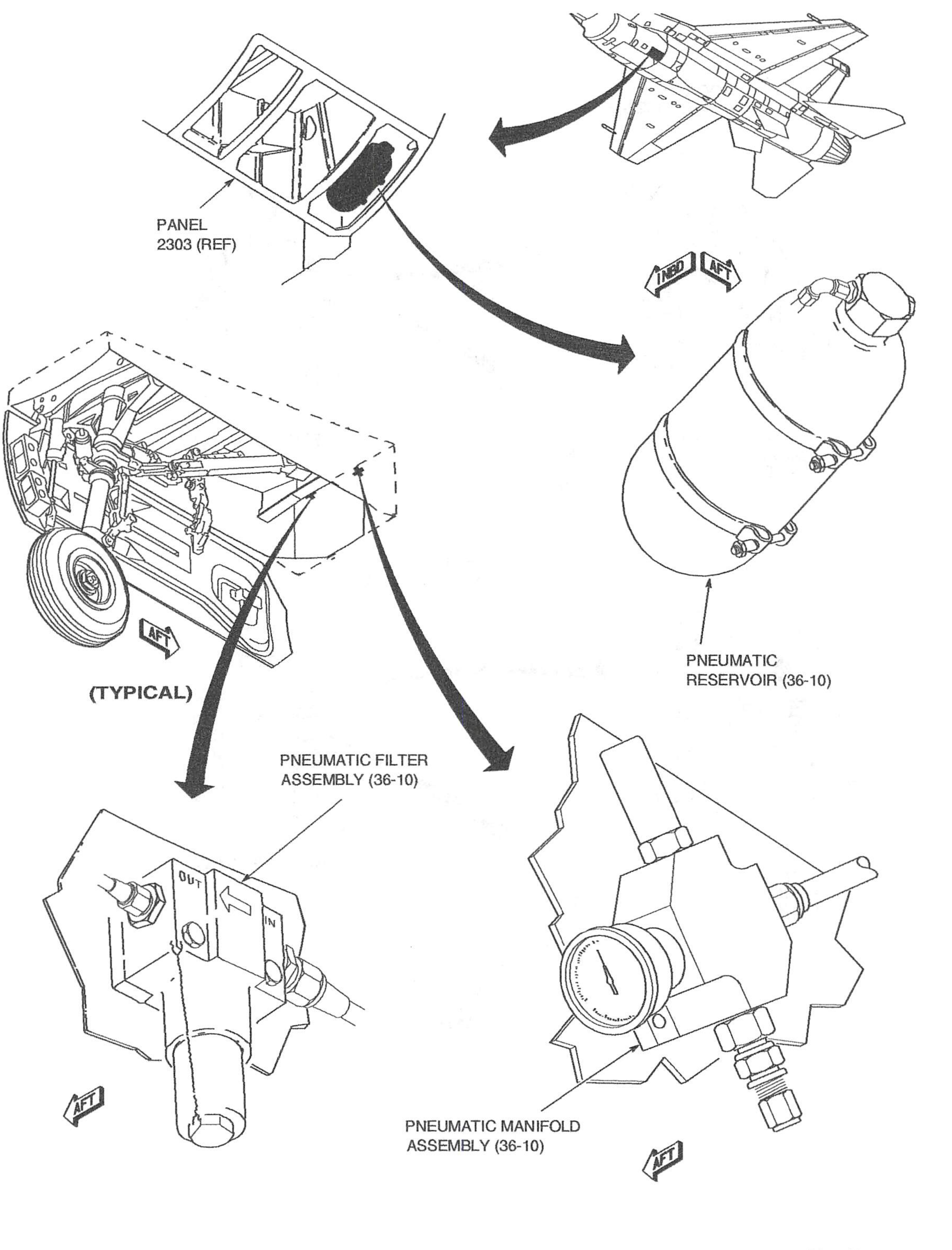


Figure 00-54. Pneumatic Supply System Components Location.

00.19 EMERGENCY POWER SYSTEM (49-00).

The emergency power system uses engine bleed air and/or monopropellant hydrazine fuel to generate electrical and/or hydraulic power in the event of the loss of the main electrical generator, the main hydraulic pumps, or the engine itself. The system is capable of operating up to 10 minutes utilizing monopropellant fuel only or up to 5 hours combined with engine bleed air. The system includes the emergency power unit, monopropellant hydrazine fuel system; controller, and warning, quantity, and test circuits. Airborne auxiliary power system cockpit controls and indicators are shown in Figure 00-55 and system components location is shown in Figure 00-56. The EPU control panel is shown in Figure 00-57.

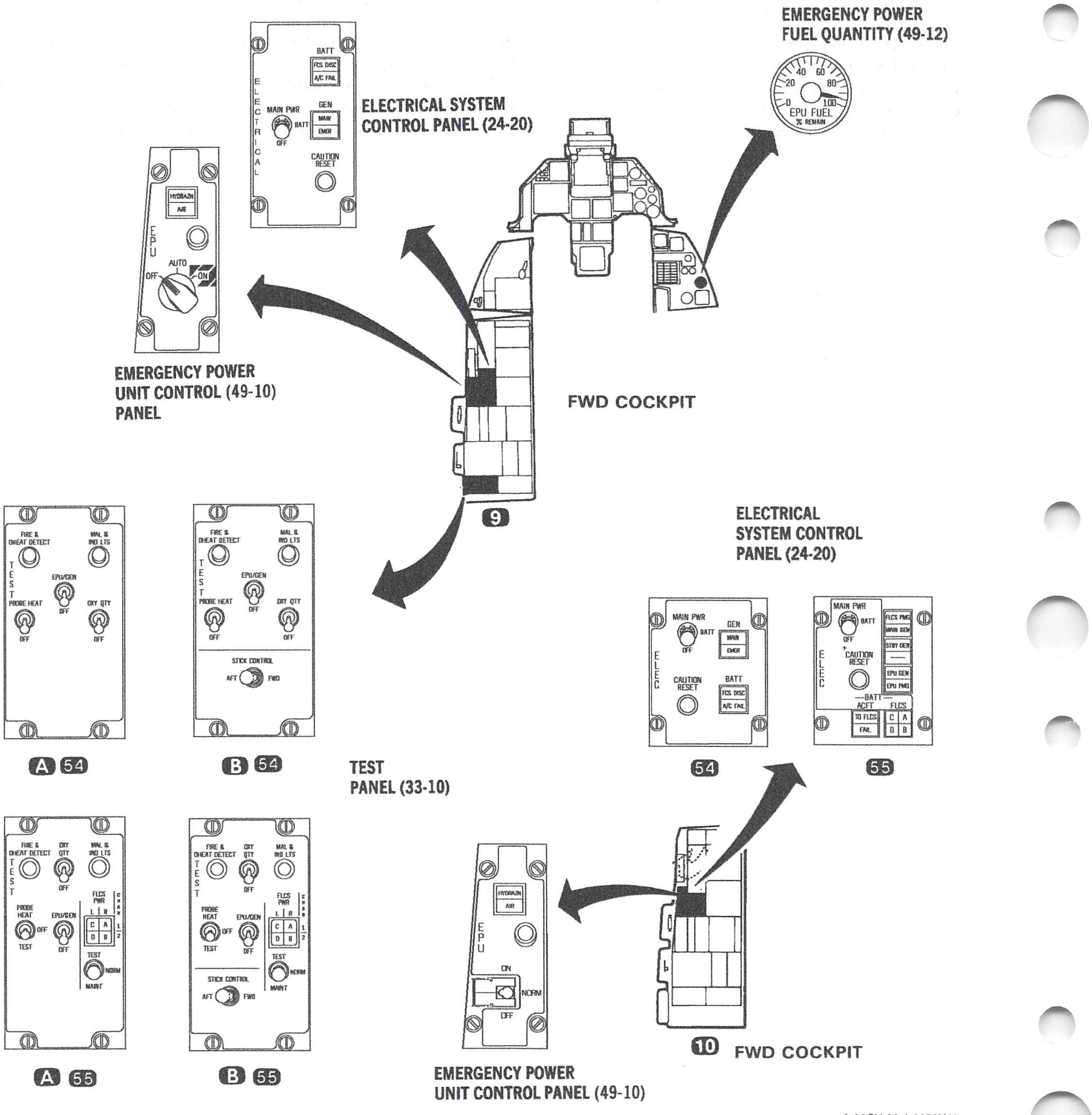
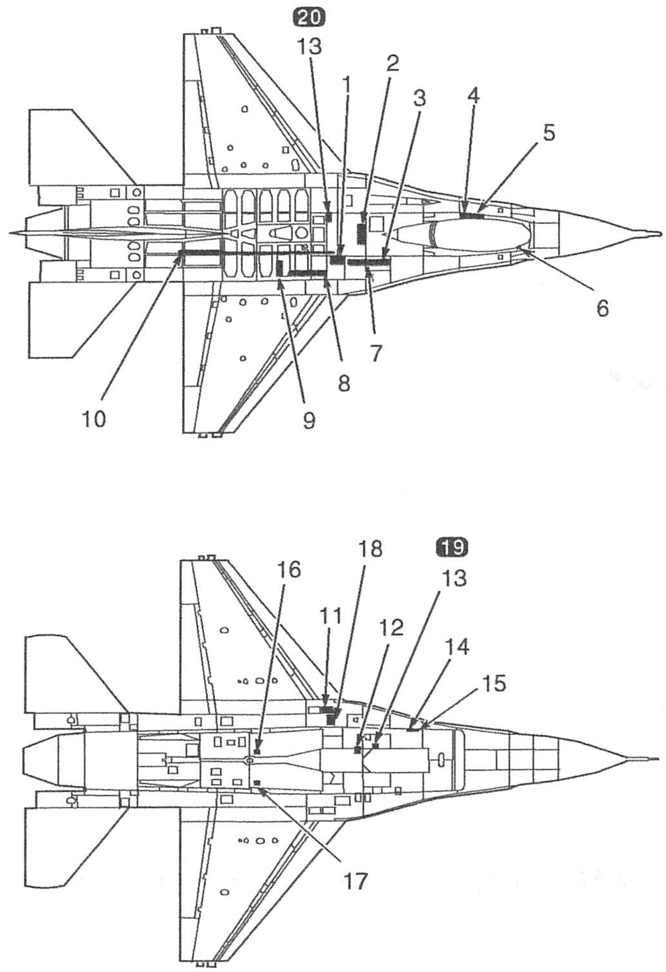


Figure 00-55. Emergency Power System Cockpit Controls and Indicators.



1. EMERGENCY HYDRAULIC PUMP PRESSURE SWITCH (49-10)
2. NITROGEN TANK (49-10)
3. NITROGEN VALVE (49-10)
4. EPU/GEN TEST SWITCH (49-10)
5. EPU CONTROL PANEL (49-10)
6. EPU FUEL QUANTITY INDICATOR (49-10)
7. HYDRAZINE FUEL TANK (49-10)
8. EMERGENCY POWER UNIT (49-10)
9. HEAT EXCHANGER (49-10)
10. BLEED AIR SHUTOFF AND REGULATOR VALVE (49-10)
11. EPU EXHAUST DUCT (49-10)
12. ELECTRONIC SPEED CONTROLLER (49-10)
13. FREQUENCY SENSING MONITOR (49-10)
14. EPU GROUND SAFETY SWITCH (49-10)
15. EPU FIRED INDICATOR (49-10)
16. HYDRAULIC SYSTEM A LOW PRESSURE SWITCH (49-10)
17. HYDRAULIC SYSTEM B LOW PRESSURE SWITCH (49-10)
18. STRAKE HYDRAULIC ACCESS DOOR (3208) (HYDRAZINE DETECTOR)

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Figure 00-56. Emergency Power System Components Location.

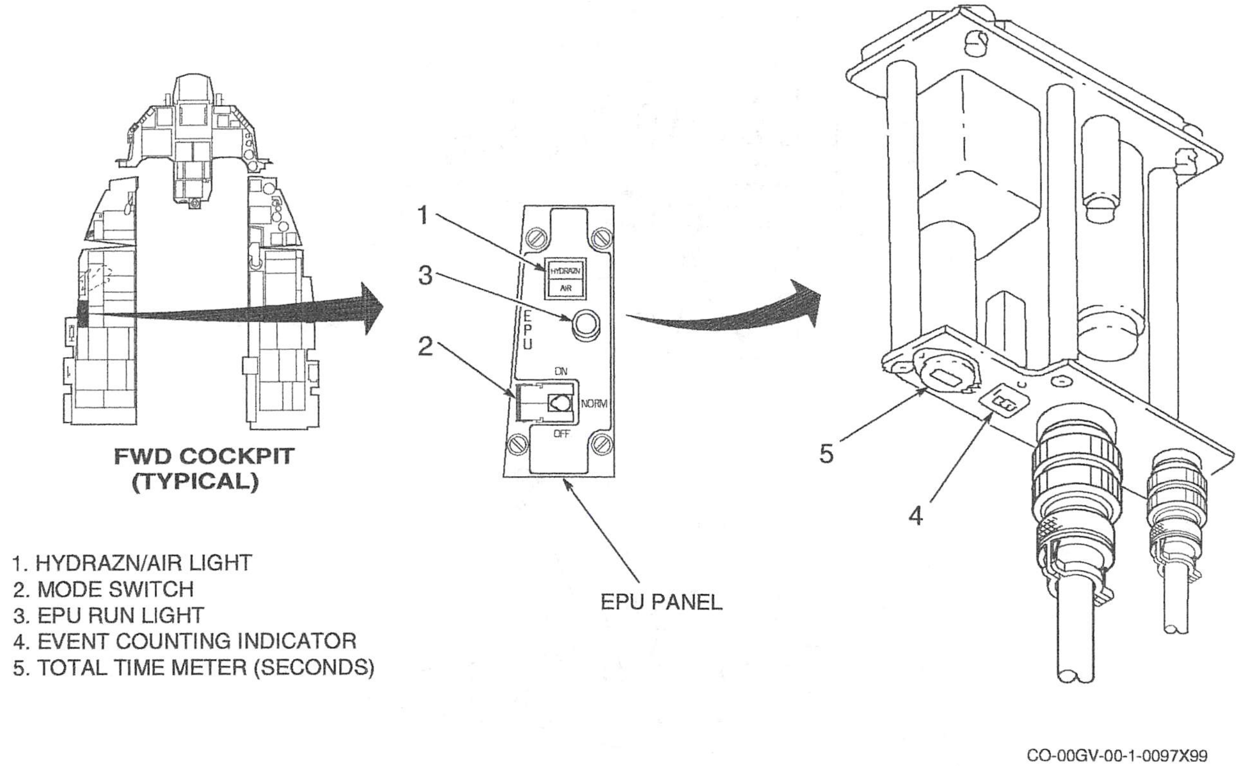

Figure 00-57. Emergency Power Unit (EPU) Control Panel.

00.20 POWER PLANT SYSTEM (70-00).

The F-16 uses one of two types of engines in the power plant system:

a. 94 F100-PW-200.

b. 95 F100-PW-220/220E.

00.20.1 F100-PW-200 Engine.

94 The F100-PW-200 engine is of the 25,000-pound thrust class. It is a low bypass, high compression ratio, dual-spool, augmented, turbofan engine which incorporates a 13-stage axial compressor, an annular ram induction combustor, a 4-stage turbine, a full-length annular fan duct, a mixed flow augmentor, a variable area balanced beam nozzle, and an Engine Electronic Control (EEC). The EEC is the primary unified hydromechanical fuel and nozzle area controller. The Backup Control (BUC) is the secondary unified hydromechanical fuel and nozzle area controller. The engine is rolled into and out of the fuselage cavity by means of a longitudinal rail mounted at the top of the fuselage cavity and a roller assembly mounted on the engine. The engine has been developed on the modular concept to allow removal of functionally and physically associated parts as a unit. Five modules, the inlet fan, the core engine, the fan drive turbine, the augmentor duct and nozzle, and the gearbox, make up the engine (Figure 00-58 and Figure 00-59).

00.20.2 F100-PW-220/220E Engine.

95 The F100-PW-220/220E engine is of the 25,000-pound thrust class. It is a low bypass, high compression ratio, dual-spool, augmented, turbofan engine which incorporates a 13-stage axial compressor, an annular ram induction combustor, a 4-stage turbine, a full-length annular fan duct, a mixed flow augmentor, a variable area balanced beam nozzle, and a Digital Electronic Engine Control (DEEC). An Engine Monitoring System (EMS) monitors engine performance and consists of the DEEC and the Engine Diagnostic Unit (EDU). The DEEC controls and monitors unified hydromechanical fuel and nozzle area control and has extensive self-test and engine fault detection capability. Engine faults are stored in the DEEC memory and transmitted to the EDU. The EDU collects and stores time, cycle, performance, and fault data. The EMS transfers control of the engine from the DEEC to the Secondary Engine Control (SEC) when certain engine malfunctions, such as overspeeds or overtemperatures, are detected. The SEC provides emergency operational capability and can be chosen manually by the pilot. Engine ground support equipment is an integral part of the overall engine main-

tenance management plan and consists of the Data Collection Unit (DCU), Engine Analyzer Unit (EAU), and a Ground Station Unit (GSU). The DCU is used by maintenance personnel to download engine flight data, stored in the EDU, into a removable nonvolatile memory module. This memory module can then be downloaded to the ground base computer and storage systems. The EAU is used for troubleshooting engine faults. Real time engine parameters can be monitored and displayed by the EAU. Data stored in the EDU and DEEC can be downloaded into the EAU and displayed to check for malfunctions. Removal and installation of the engine are accomplished from the rear of the aircraft. The engine is rolled into and out of the fuselage cavity by means of a longitudinal rail mounted at the top of the fuselage cavity and a roller assembly mounted on the engine. The engine has been developed on a modular concept to allow removal of functionally and physically associated parts as a unit. Five modules, the inlet fan, the core engine, the fan drive turbine, the augmentor duct and nozzle, and the gearbox, make up the engine (Figure 00-60 and Figure 00-61).

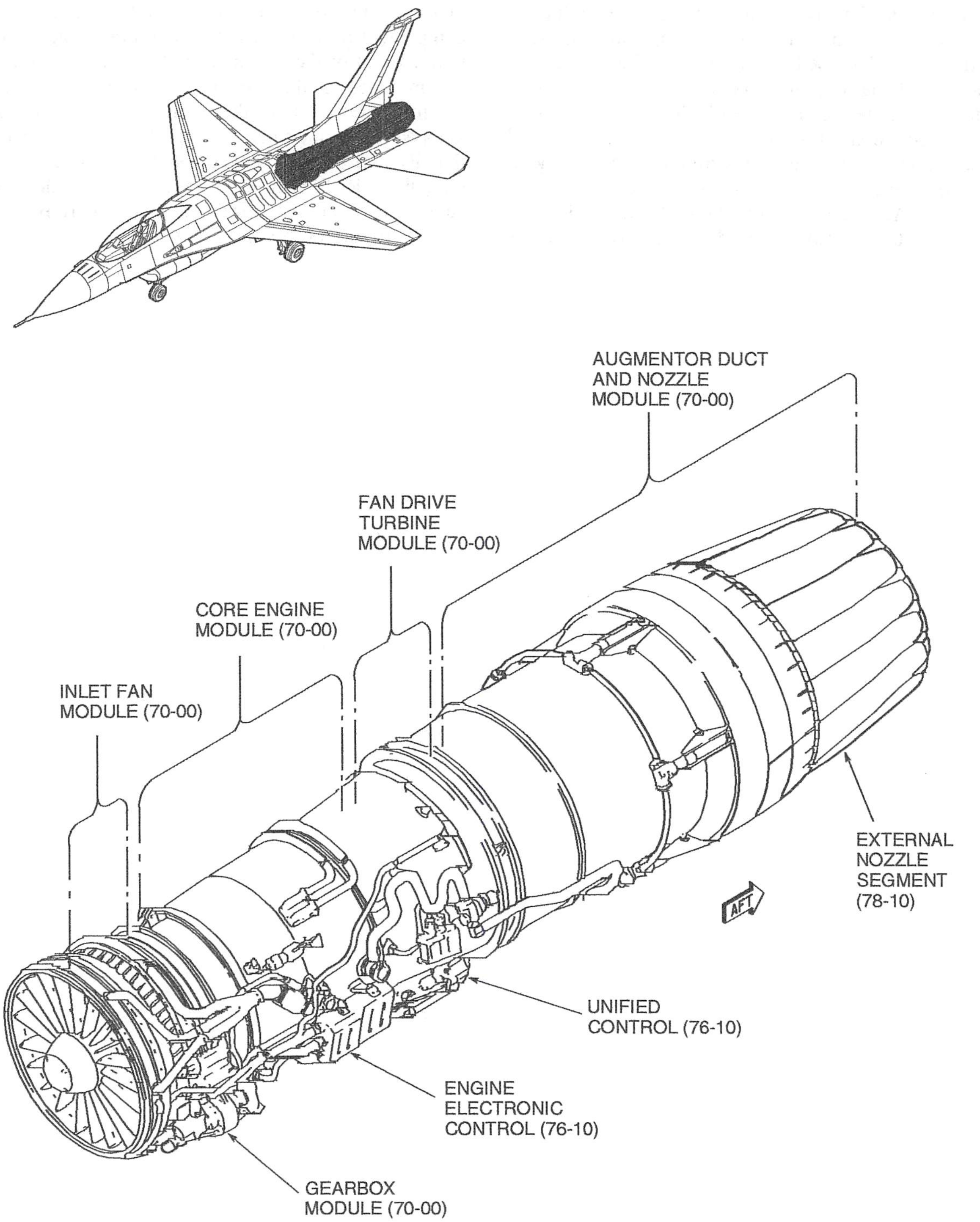

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Figure 00-58. F100-PW-200 Major Engine Assemblies 94.

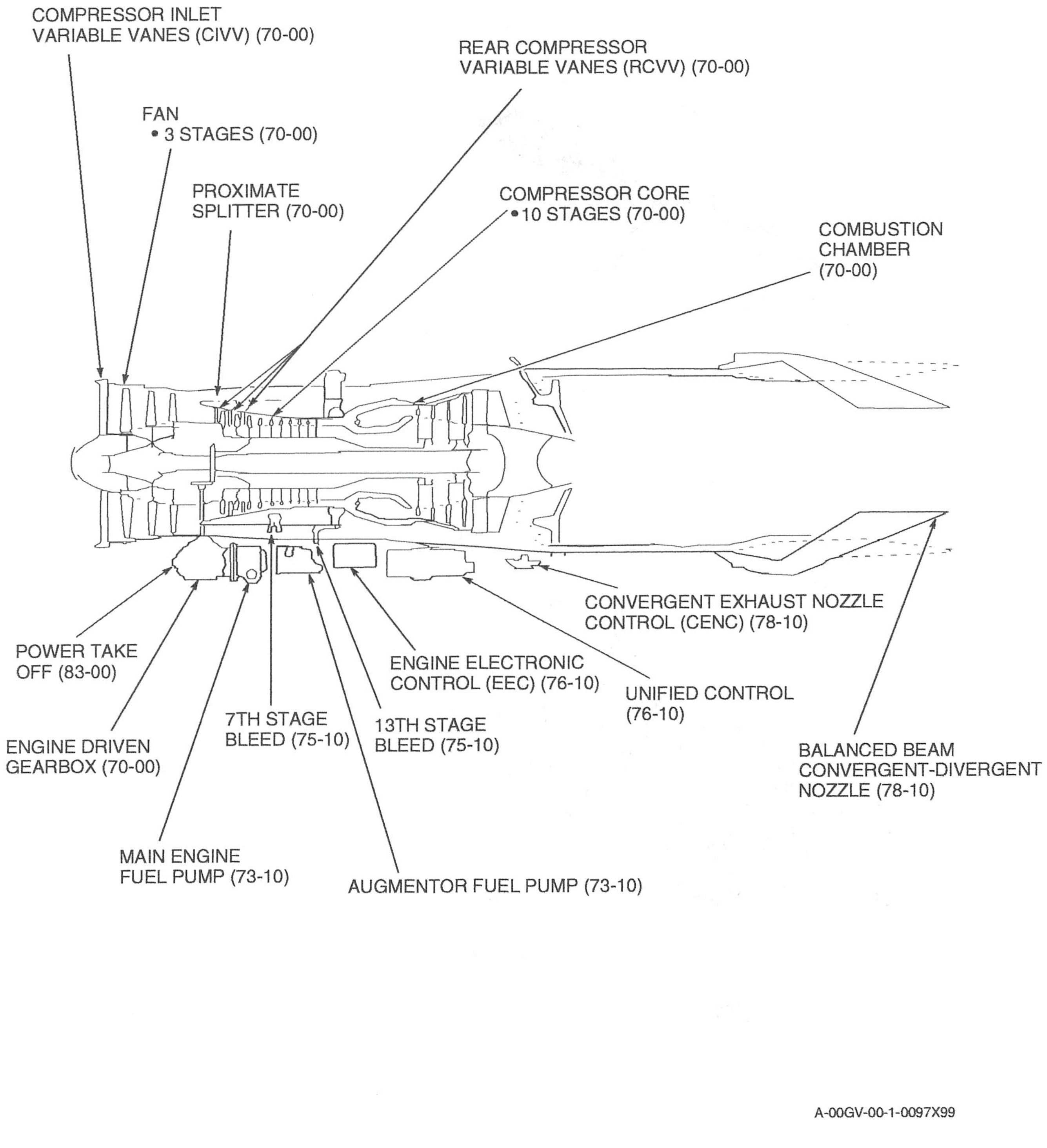

Figure 00-59. F100-PW-200 Engine Components Location 94.

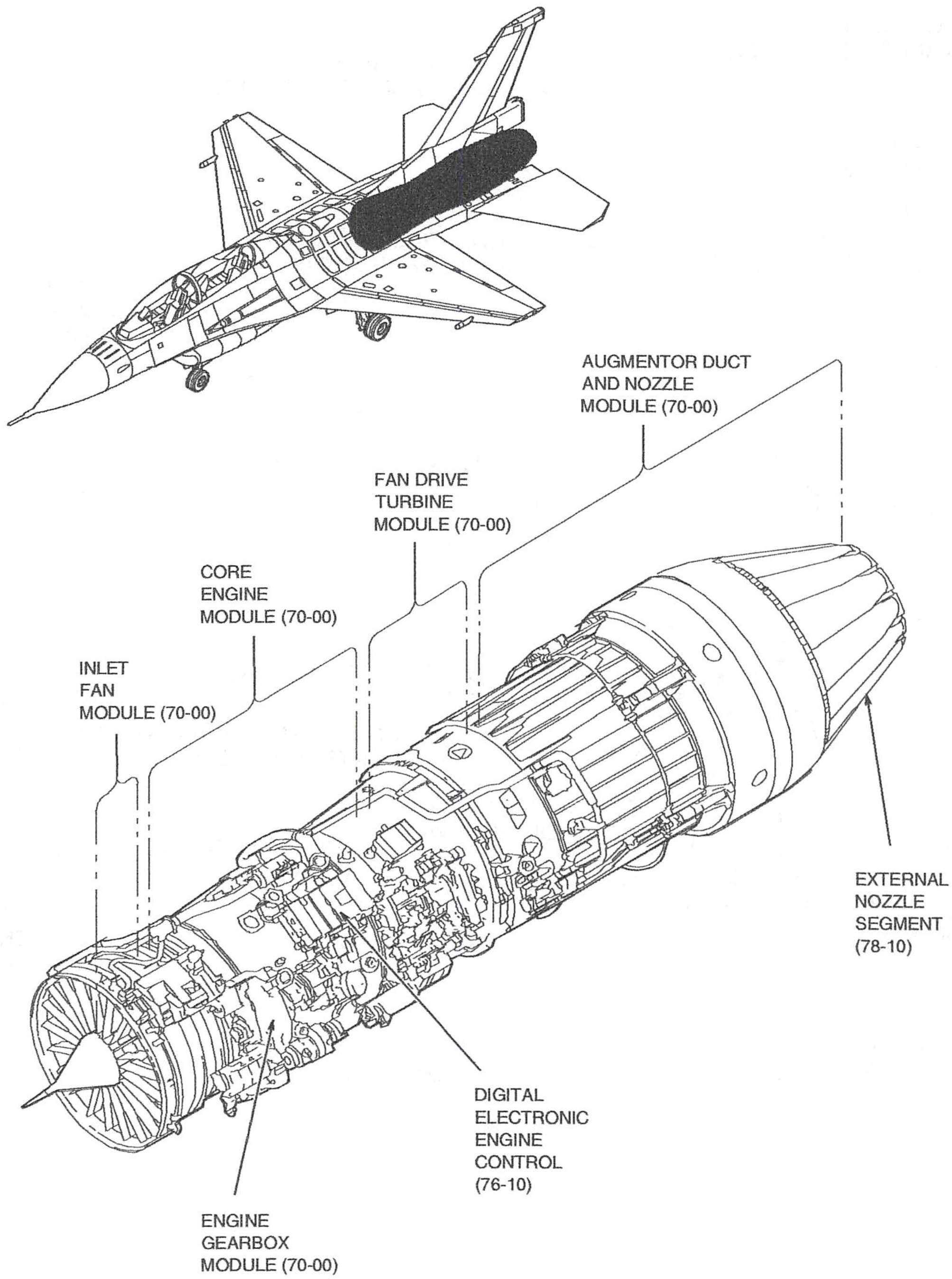

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Figure 00-60. F100-PW-220 Major Engine Assemblies 95.

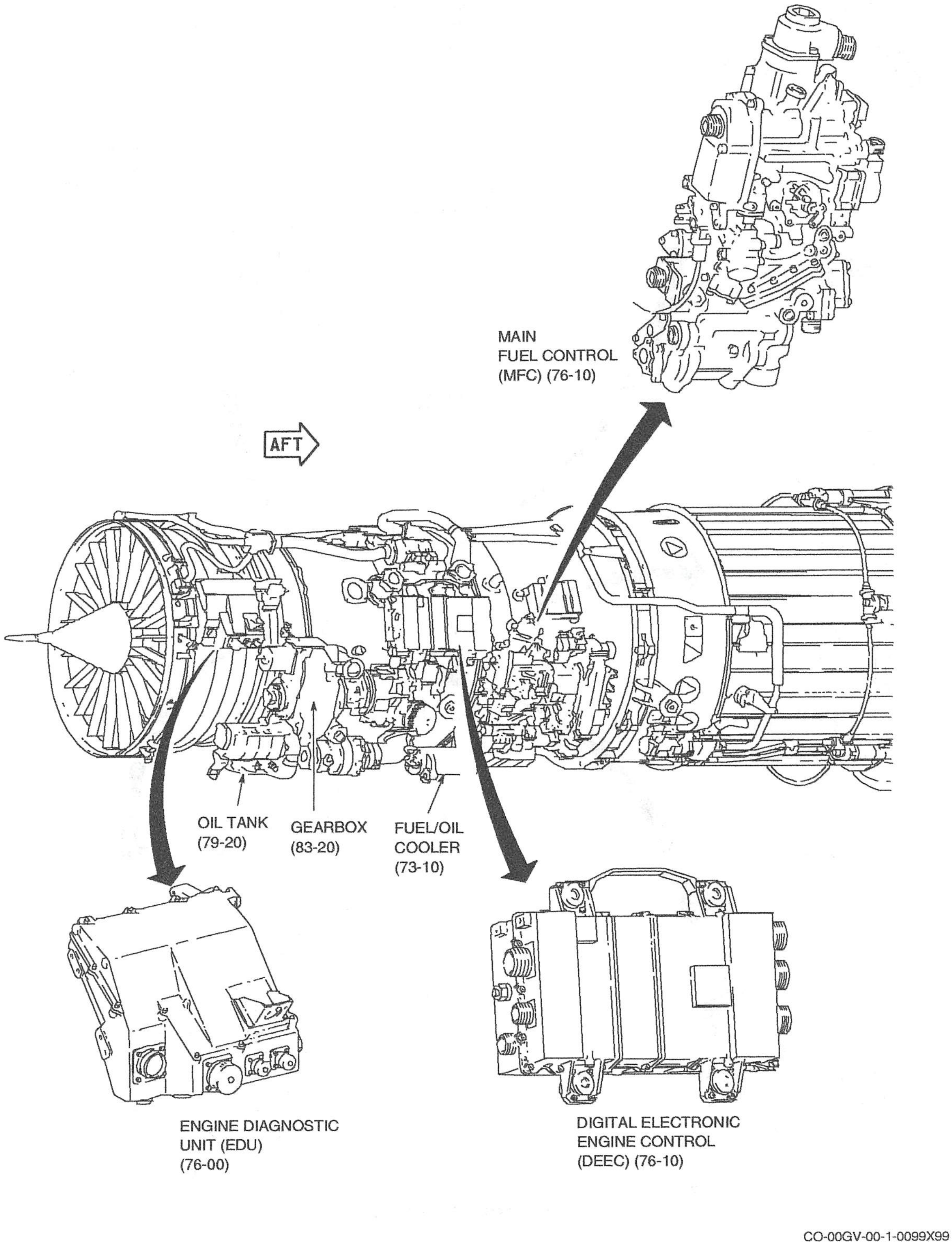

Figure 00-61. F100-PW-220 Engine Components Location 95.

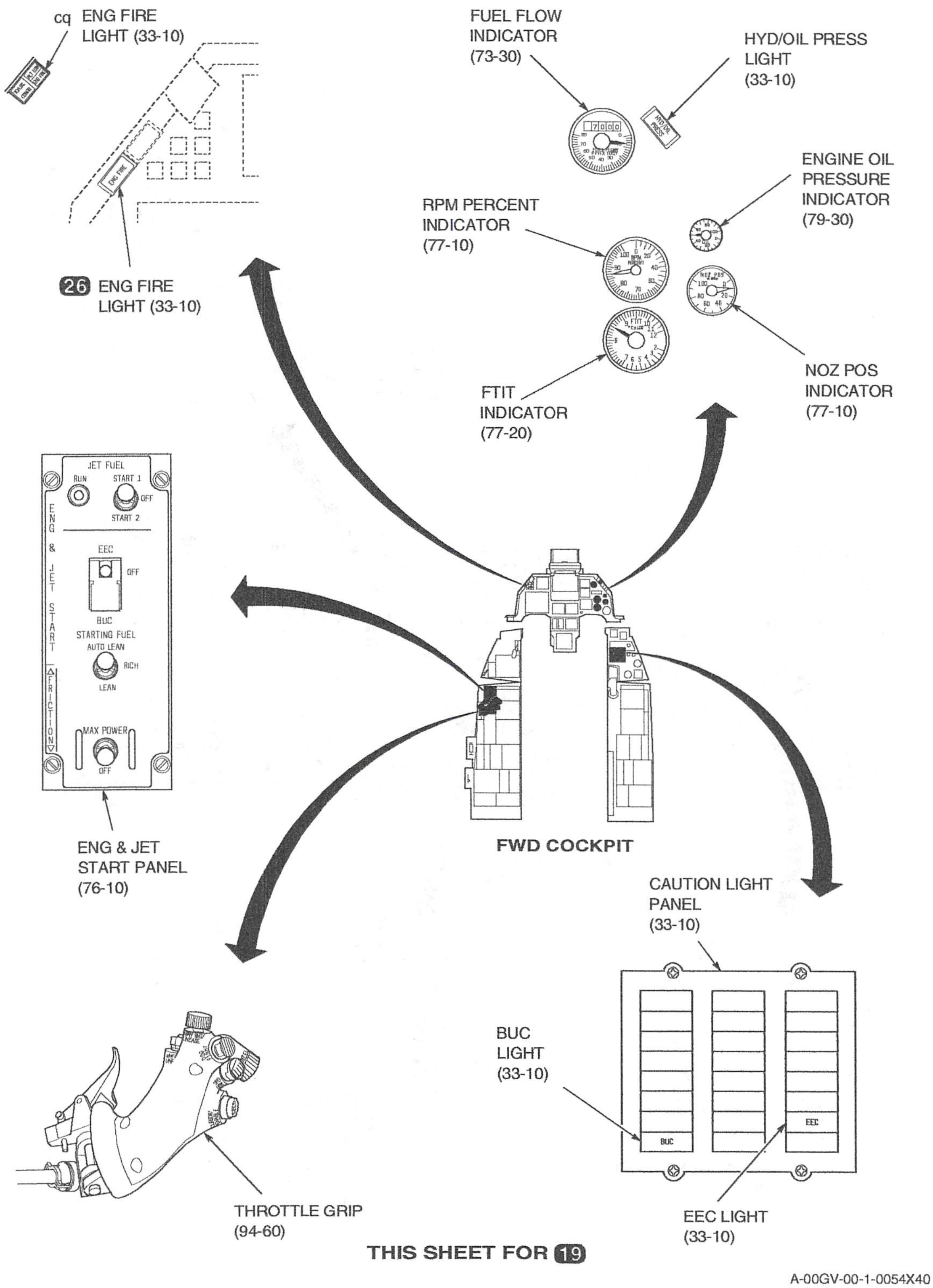

Figure 00-62. Engine Cockpit Controls and Indicators. (Sheet 1 of 2)

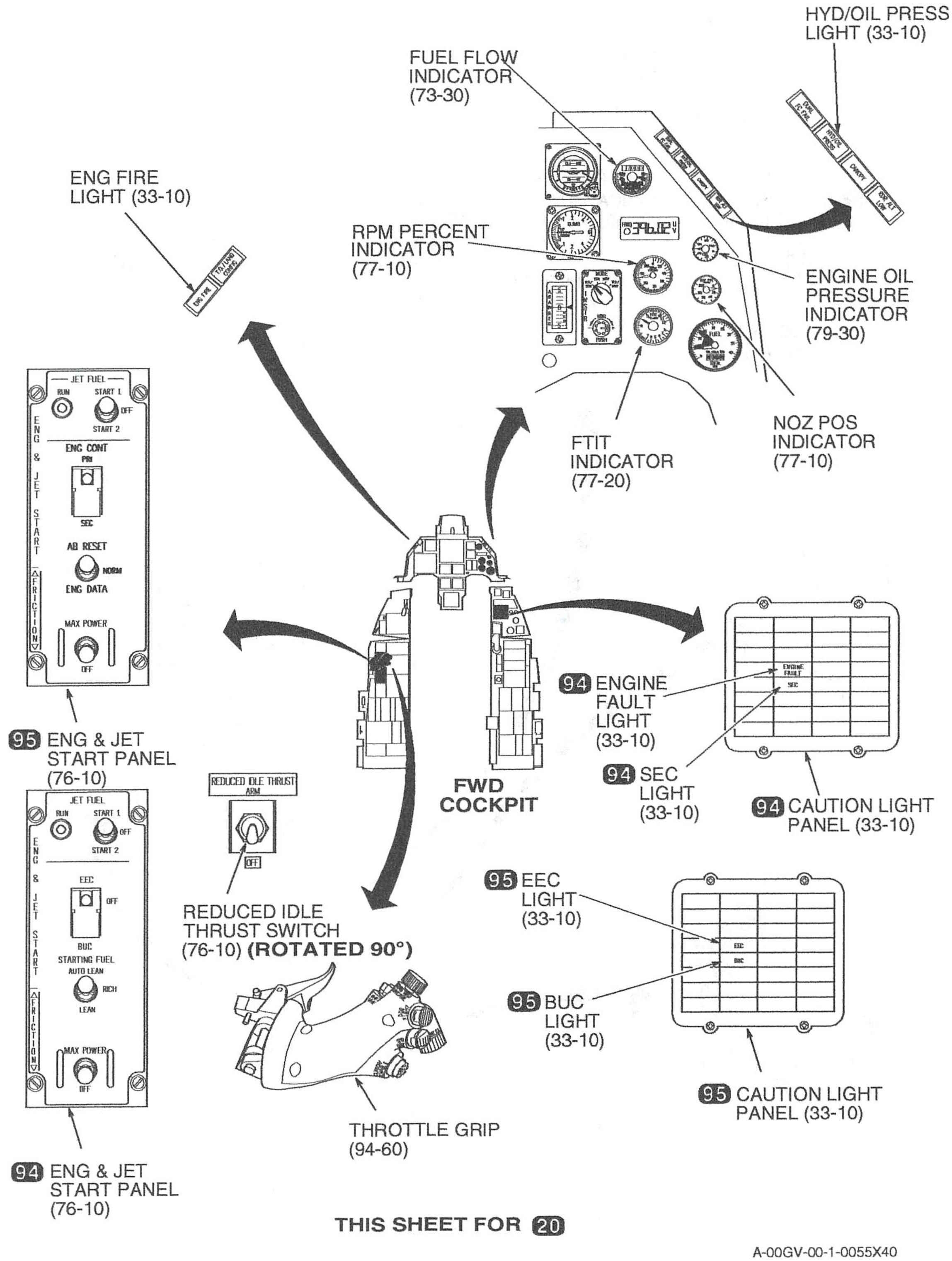

Figure 00-62. Engine Cockpit Controls and Indicators. (Sheet 2)

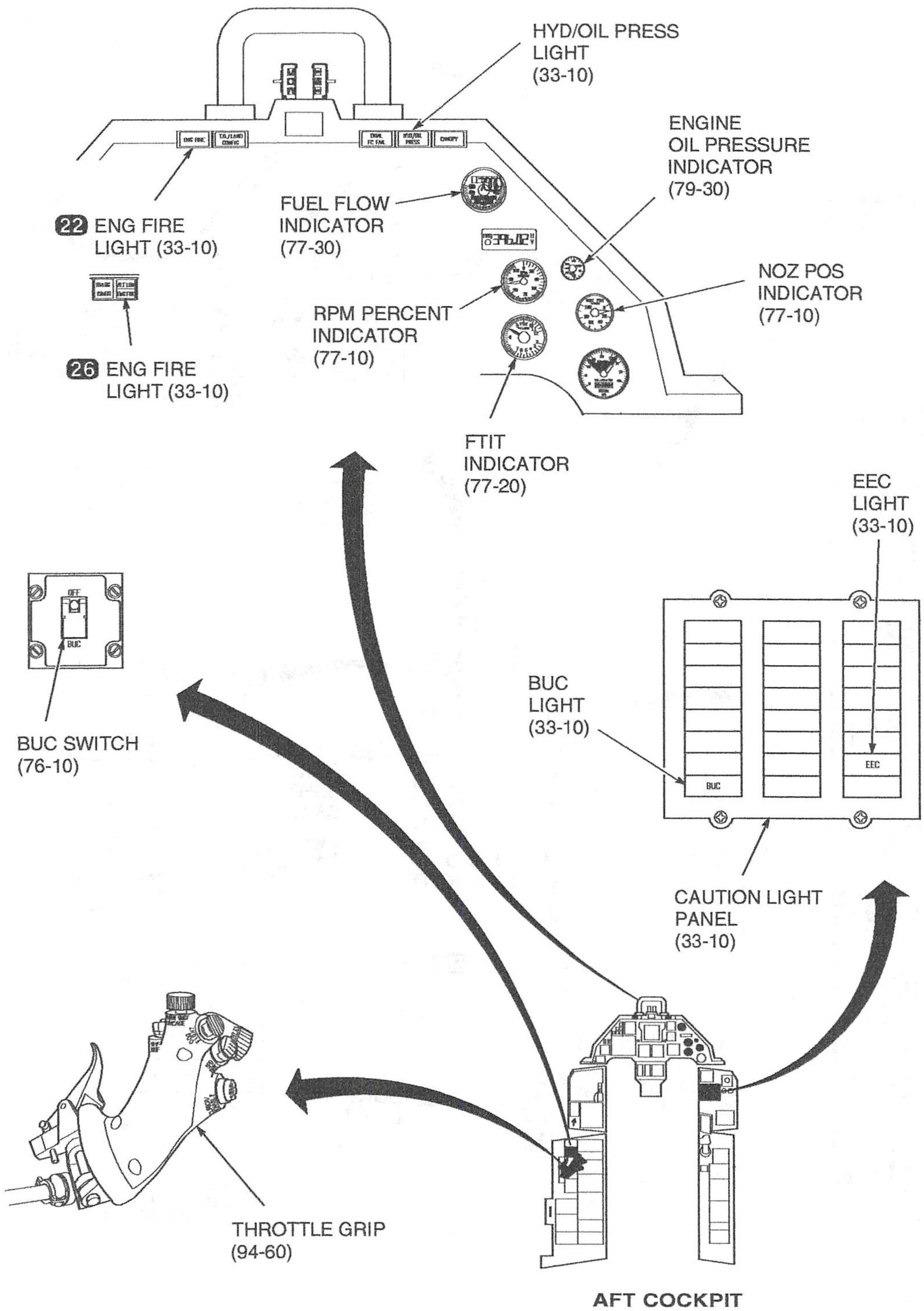

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Figure 00-63. Engine Cockpit Controls and Indicators. (Sheet 1 of 2)

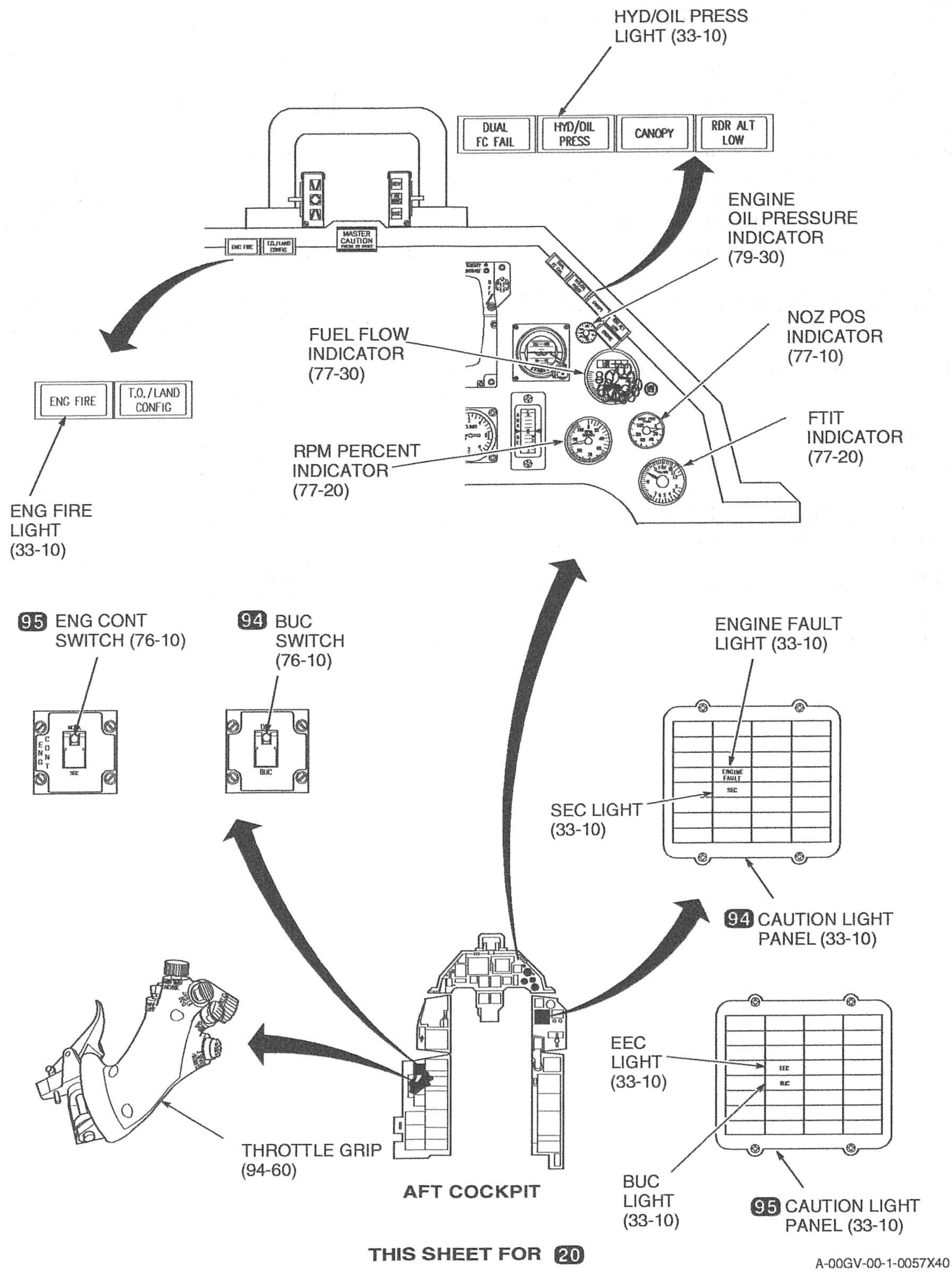


Figure 00-63. Engine Cockpit Controls and Indicators. (Sheet 2)

00.21 POWER PLANT SYSTEM (ENGINE DRAINS) (71-00).

00.21.1 Engine Drains (71-70). The engine drains system consists of the engine gearbox breather manifold, the convergent exhaust nozzle control air vent, the front fuel/oil drain manifold, and the rear fuel drain manifold. The front fuel/oil drain manifold provides drainage for the main fuel pump, the compressor bleed cylinder, the pressurization and dump valve, and the augmentor pump and oil cooler. The rear fuel drain manifold provides drainage for the exhaust nozzle control.

00.22 ENGINE FUEL AND CONTROL SYSTEM (73-00).

The engine fuel and control system (Figure 00-64), consists of the following subsystems:

a. Distribution (73-10)
b. Indicating (73-30)

00.22.1 Distribution (73-10). Fuel distribution is broken down into main fuel and augmentor fuel.

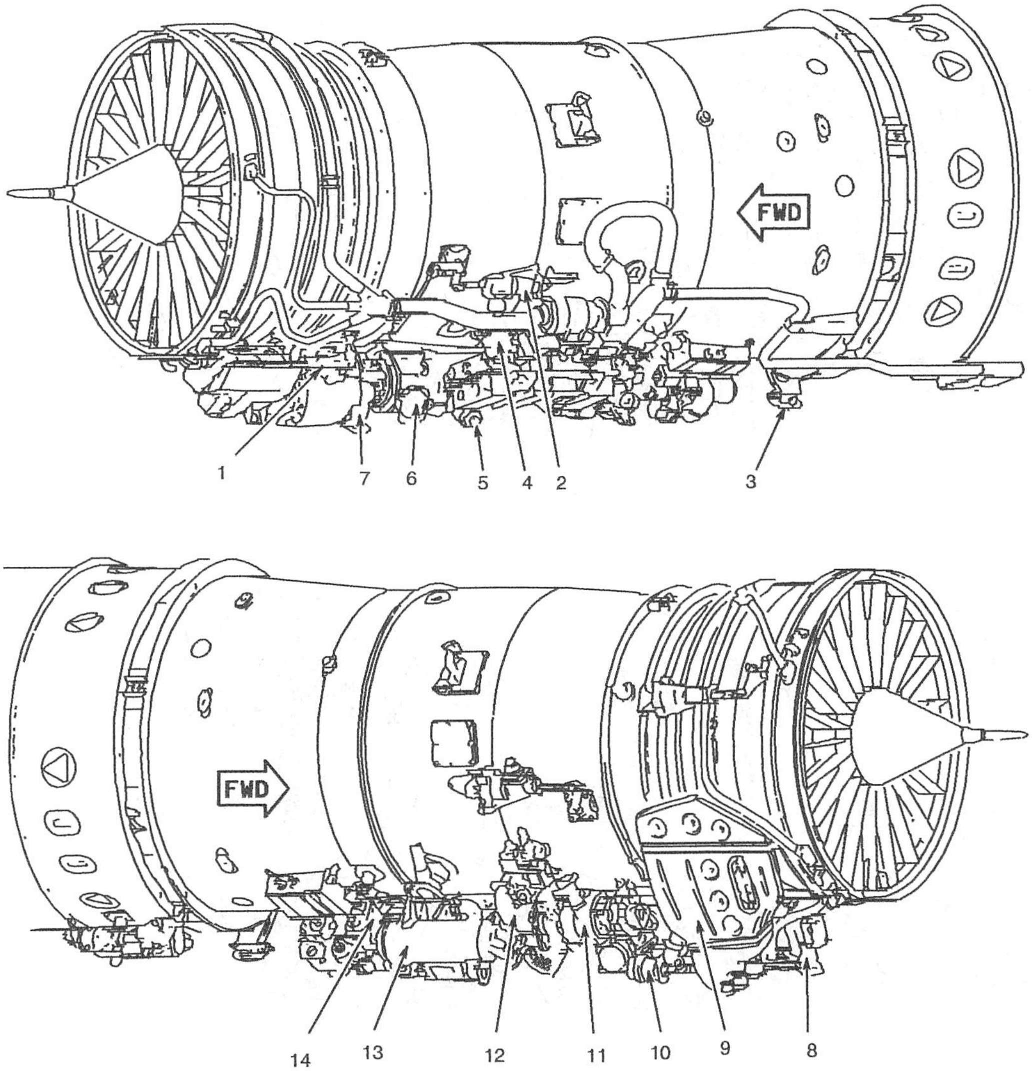
00.22.1.1 94 Main Fuel. The main fuel system supplies fuel for all core engine module operations and includes the main fuel pump, unified control, fan exit temperature sensor, N2 sensor, derichment valve, fuel/oil cooler, fuel pressurization and dump valve, fuel nozzles, compressor bleed cylinder, and rear compressor variable vane cylinders.

00.22.1.2 95 Main Fuel. The main fuel system supplies fuel for all core engine module operations and includes the digital electronic engine control, main fuel control, main fuel gear pump and filter, fuel/oil cooler, fuel pressurization and dump valve, fuel nozzles, compressor bleed cylinder, rear compressor bleed actuating cylinders, and compressor bleed actuating cylinders.

00.22.1.3 94 Augmentor Fuel. The augmentor fuel system supplies fuel for all augmentor module operations and includes the main fuel pump, augmentor fuel pump, augmentor fuel pump controller, fuel/oil cooler, unified control, and augmentor fuel segments.

00.22.1.4 95 Augmentor Fuel. The augmentor fuel system supplies fuel for all augmentor module operations and includes the augmentor fuel pump, augmentor fuel controller, and augmentor fuel segments.

00.22.2 Indicating (73-30). The fuel flow indicator (Figure 00-62) is located in the upper right side of the cockpit on the instrument panel and is electrically controlled by an engine fuel flow transmitter.



1. COMPRESSOR INLET VARIABLE VANE CONTROL (CIVV) AND CYLINDER (75-20)
2. REAR COMPRESSOR VARIABLE VANE (RCVV) CYLINDER (73-10)
3. REAR FUEL DRAIN (71-70)
4. COMPRESSOR BLEED CYLINDER (73-10)
5. FRONT FUEL DRAIN (71-70)
6. MAIN FUEL PUMP (73-10)
7. BREATHER PRESSURIZING VALVE (79-00)
8. OIL PUMP (79-20)
9. OIL TANK (79-20)
10. OIL FILTER AND COLD START RELIEF VALVE (79-20)
11. AUGMENTOR FUEL PUMP (AFP) (73-10)
12. AUGMENTOR FUEL PUMP CONTROLLER (AFPC) (73-10)
13. FUEL/OIL COOLER (73-10)
14. FUEL DERICHMENT VALVE (73-10)

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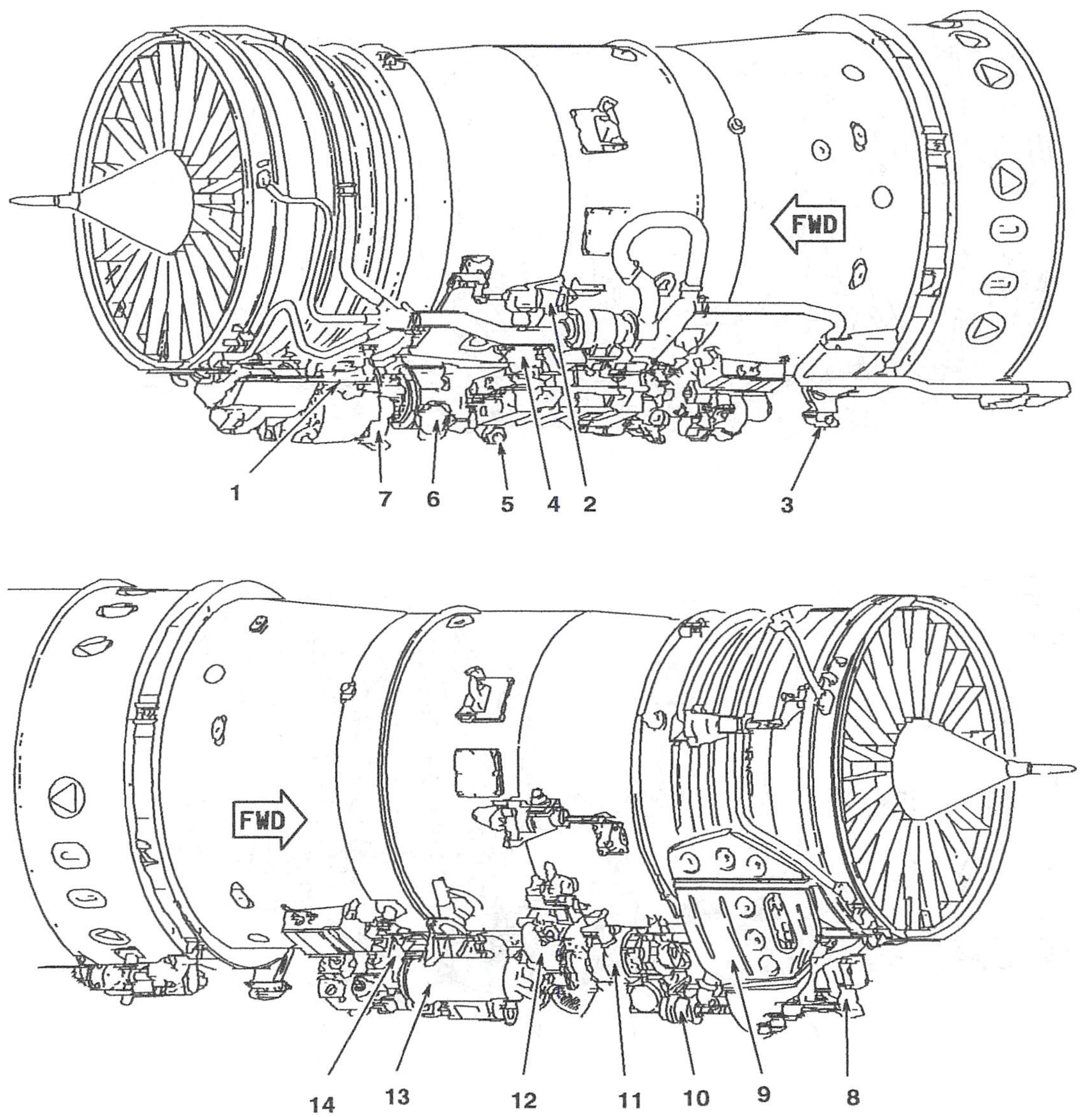
Figure 00-64. Engine Fuel and Oil Systems Components Location. (Sheet 1 of 2)



1. COMPRESSOR INLET VARIABLE VANE CONTROL (CIVV) AND CYLINDER (75-20)
2. REAR COMPRESSOR VARIABLE VANE (RCVV) CYLINDER (73-10)
3. REAR FUEL DRAIN (71-70)
4. COMPRESSOR BLEED CYLINDER (73-10)
5. FRONT FUEL DRAIN (71-70)
6. MAIN FUEL PUMP (73-10)
7. BREATHER PRESSURIZING VALVE (79-00)
8. OIL PUMP (79-20)
9. OIL TANK (79-20)
10. OIL FILTER AND COLD START RELIEF VALVE (79-20)
11. AUGMENTOR FUEL PUMP (AFP) (73-10)
12. AUGMENTOR FUEL PUMP CONTROLLER (AFPC) (73-10)
13. FUEL/OIL COOLER (73-10)
14. FUEL DERICHMENT VALVE (73-10)

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Figure 00-64. Engine Fuel and Oil Systems Components Location. (Sheet 2)

00.23 ENGINE IGNITION ELECTRICAL POWER SUPPLY AND DISTRIBUTION SYSTEMS (74-00).

00.23.1 94 Distribution (74-20). Ignition distribution is controlled by the unified control and is divided into the dual ignition and single ignition exciters. The dual ignition exciter provides power to the left main and augmentor ignitors. The single ignition exciter provides power to the right main ignitor.

00.23.2 95 Distribution (74-20). Ignition distribution is controlled by the main and augmentor fuel controls and is divided into the left and right dual ignition exciters. The left dual ignition exciter provides power to the left main and left augmentor ignitor. The right dual ignition exciter provides power to the right main and right augmentor ignitors.

00.24 ENGINE AIR SYSTEM (75-00).

The engine air system consists of:

a. Engine Anti-Icing (75-10)

b. Accessory Cooling (75-20)

00.24.1 Engine Anti-Icing (75-10). The engine anti-icing system (Figure 00-65) prevents formation of ice on the engine inlet guide vanes and engine nose cone. Regulated engine compressor hot air from the 94 seventh stage, 95 13th stage is used as the anti-icing medium. Anti-icing is controlled by a three position switch. Placing the switch to the OFF position shuts off anti-icing air from the engine. Placing the switch to the AUTO position activates automatic control of the engine anti-icing system. Placing the switch to the ON position turns on anti-icing air. By alternately placing the switch from the OFF (valve closed) position to the ON (valve open) position, the anti-icing valve operation can be verified. An ice detector sensor is located in the bottom of the inlet duct, forward of the engine face. When the switch is in the AUTO position, the ice detector provides a signal to turn on anti-icing air when icing conditions exist in the air inlet, and to shut off anti-icing air when icing conditions do not exist in the air inlet.

00.24.2 Accessory Cooling (75-20). The accessory cooling system provides a means of venting the interior area of the nacelle and purging the compartment of any combustible vapors. The system is operated by engine bleed air and provides an airflow from forward to aft between the fuselage structure and the engine. The air exits at the aft end of the fuselage. The system is shut off in flight when ram-air pressure is adequate to vent the system.

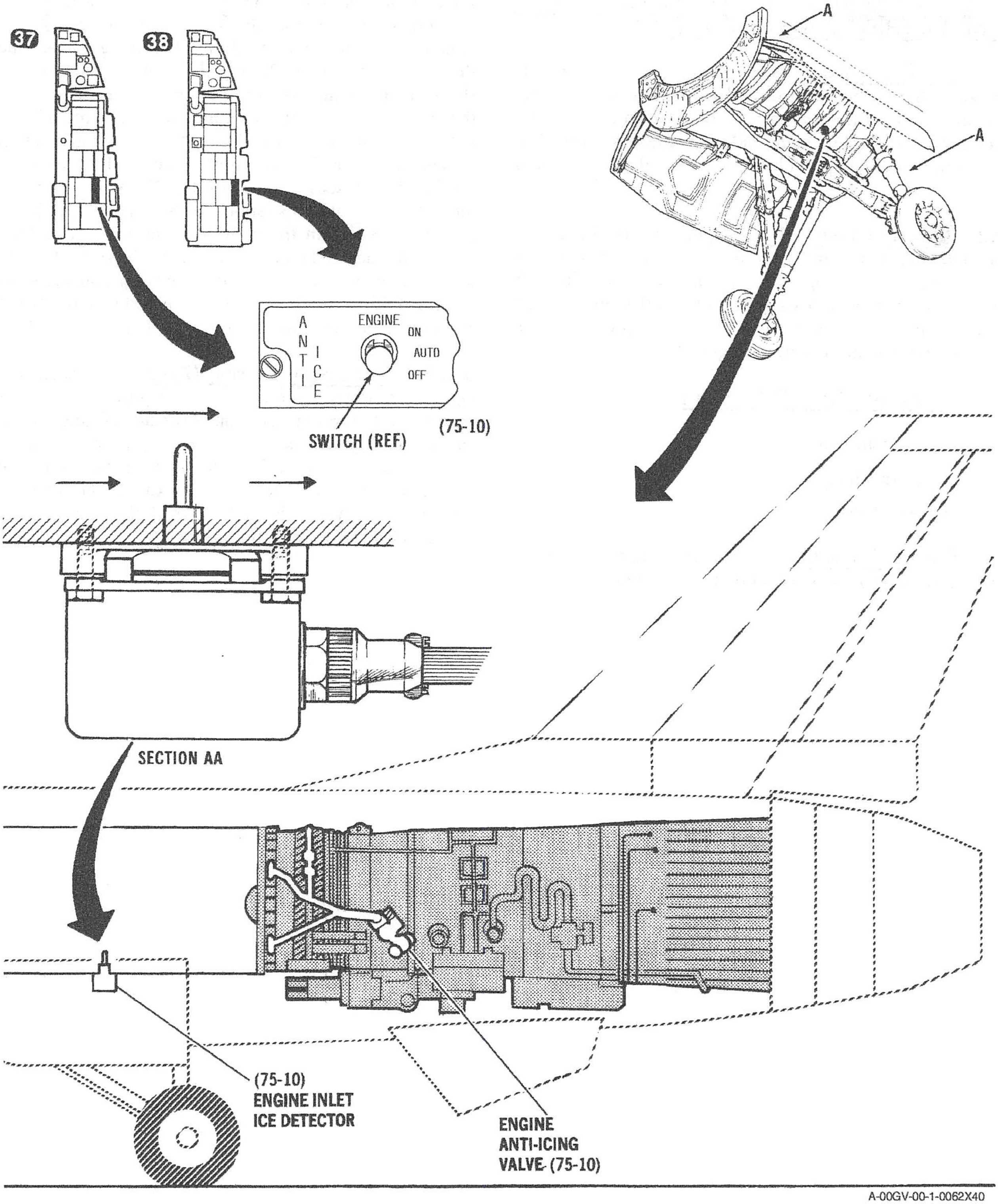

Figure 00-65. Engine Air/Anti-Icing System Controls, Indicators, and Components Location.

00.25 ENGINE CONTROLS SYSTEM (76-00).

The engine controls system consists of the ENG & JET START panel, the throttle grip, and the REDUCED IDLE ENGINE INDICATING SYSTEM (77-00)THRUST switch and is located on the left console (Figure 00-62).

00.25.1 Power Control (76-10). The power control system consists of the ENGINE & JET START panel. The ENGINE & JET START panel has the following switches: a three position JET FUEL start switch (START 1, OFF, START 2), a two position MAX POWER switch (OFF, MAX POWER), 94 a three position EEC/BUC switch (BUC, OFF, EEC), 95 a two position ENG CONT switch (PRI, SEC), 94 a three position STARTING FUEL switch (LEAN, RICH, AUTO LEAN), and 95 a three position AB RESET switch (AB RESET, NORM, ENG DATA). Aft cockpit power control consists of the following: 94 a BUC switch (OFF, BUC) and 95 an ENG CONT switch (NORM, SEC).

00.26 ENGINE INDICATING SYSTEM (77-00).

The engine indicating system indicators are located in the upper right side of the cockpit on the instrument panel and the right auxiliary console (Figure 00-62 and Figure 00-62 (Sheet 2)). Engine indicating consists of:

a. Power (77-10)

b. Temperature (77-20)

c. Analyzing (77-30)

00.26.1 Power (77-10). The power system transmits signals from the engine exhaust position transmitter to the nozzle position indicator and from the engine generator to the engine RPM percent indicator. The engine RPM is monitored by the engine warning control unit. When the engine RPM is out of tolerance, the engine warning control unit will send out an engine warning signal.

00.26.2 Temperature (77-20). The temperature system transmits signals from the Fan Turbine Inlet Temperature (FTIT) transmitters to the FTIT indicator. The FTIT is monitored by the engine warning control unit. When an FTIT overtemp is detected, the engine warning control unit will send out an engine warning signal.

00.26.3 Analyzing (77-30). The analyzing system monitors faults and stores them until they can be collected by a ground crew.

00.27 ENGINE EXHAUST SYSTEM (78-00).

00.27.1 Collector/Nozzle (78-10). The collector/nozzle system takes compressor discharge air off the 13th stage and regulates it through the Convergent Exhaust Nozzle Control (CENC) regulator. The regulated compressor discharge air is controlled by the CENC air shutoff valve. Regulated compressor discharge air is used to control convergent nozzle primary flexible output shafts through the CENC. Convergent nozzle primary flexible output shafts control the primary convergent nozzle actuator, which controls four secondary convergent nozzle actuators.

00.28 ENGINE OIL SYSTEM (79-00).

The engine oil system consists of:

a. Distribution (79-20)

b. Indicating (79-30)

00.28.1 Distribution (79-20). The distribution system pumps oil from the main oil tank through the cold start relief valve and oil filter. The oil from the cold start relief valve and oil filter is divided and routed through two sets of air/oil coolers. After the oil flows through the air/oil coolers, it flows through a single augmentor fuel/oil cooler, and then through a fuel/oil cooler and back to the cold start relief valve and oil filter. From the cold start relief valve and oil filter, cooled and filtered oil is distributed to the main oil pump, the main gearbox, and the No. 2 and No. 3 bearings. The main oil pump boosts cooled and filtered oil to the No. 1, No. 4, and No. 5 bearings. Scavenge oil is returned to the oil tank from the No. 2 and No. 3 bearings and the main gearbox. Scavenge oil is returned to the main oil pump from the No. 1, No. 4, and No. 5 bearings and the main gearbox.

00.28.2 Indicating (79-30). The indicating system consists of an engine oil pressure transmitter, which transmits a signal to the engine oil pressure indicator and an engine oil low pressure switch, which sends a signal to the HYD/OIL PRESS light.

00.29 ENGINE STARTING SYSTEM (80-00).

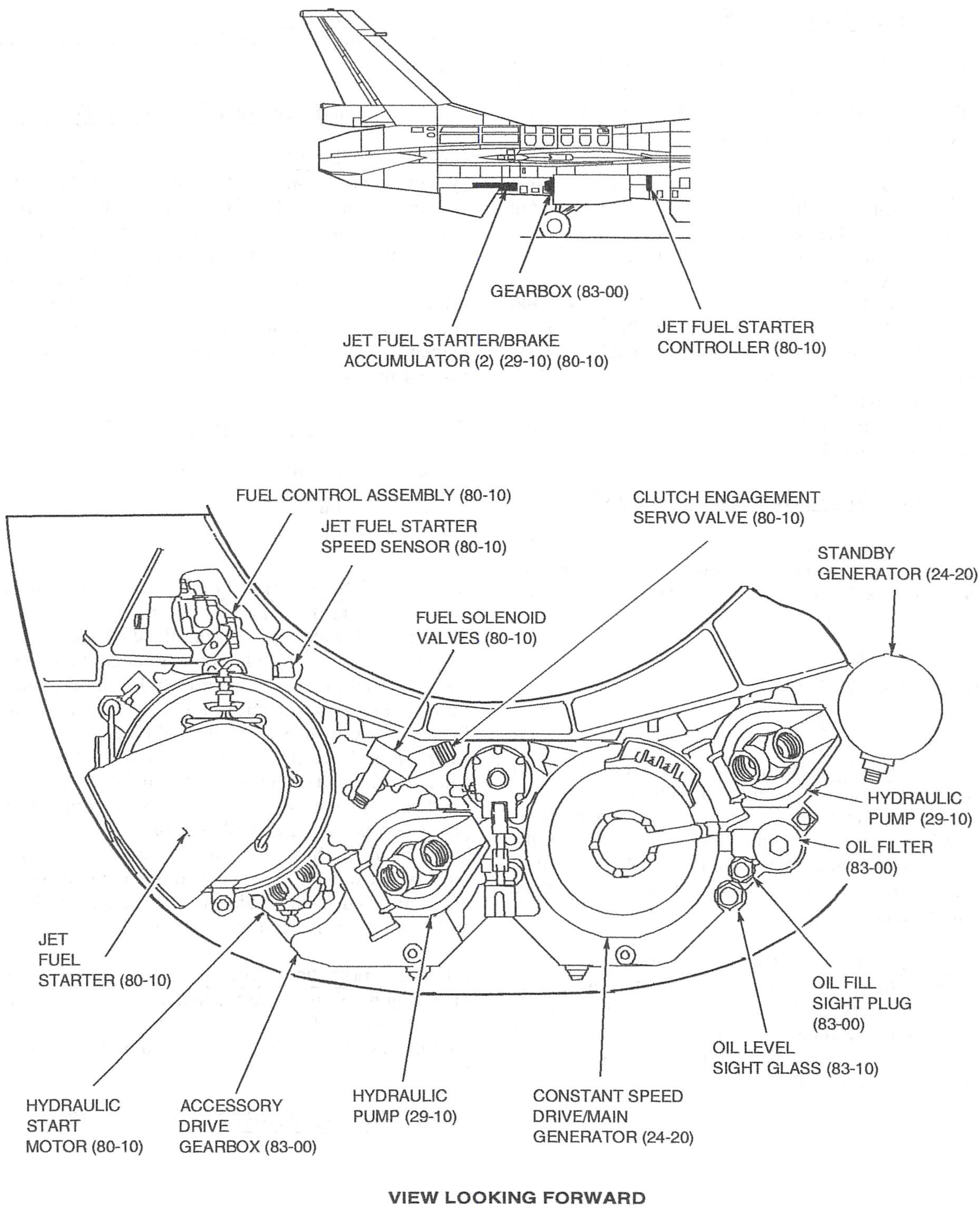

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Figure 00-66. Location of Jet Fuel Starter System Elements.

00.30 WEAPON SYSTEM (94-00).

The weapons system provides for air-to-air, air-to- ground, and nuclear, as well as conventional, capability. The weapons system consists of the weapons release and management system, weapons suspension, M61A1 gun system, fire control sensing, and fire control avionics.

00.30.1 Stores Management Set (SMS) (94-10). The SMS consists of three major components:

a. Stores Control Panel (SCP)

b. Central Interface Unit (CIU)

c. Remote Interface Unit (RIU), four types (conventional and nuclear weapons)

00.30.1.1 13 The stores management system provides for the monitoring, control, release, and jettisoning of stores on a selective or emergency basis except for AIM-9 jettison. External stores carriage provisions consist of nine hardpoint store stations with pylons and launchers for carrying, launching, and releasing missiles, fuel tanks, bombs, ECM pods, dispensers, and other stores.

00.30.1.2 ADF The stores management system provides for the monitoring, control, and launch of AIM-7, AIM-9, and AIM-20 missiles and the monitoring, control, and jettisoning of external fuel tanks. External stores carriage provisions consist of nine hardpoint store stations with pylons and launchers. A fuel tank, electronic countermeasures pods, or weapons are carried on the fuselage centerline station. The two inboard wing stations generally carry fuel tanks but may carry weapons. Missiles may be carried on all wing and wingtip stations. An Air Combat Maneuvering Instrumentation (ACMI) pod and a travel pod can be carried on certain wing stations.

00.30.1.3 The stores control panel provides a continuous display of stores identification, location, quantity, present status, and delivery mode. The delivery program may be changed in flight. Remote control of SMS functions is accomplished by use of switches on the side stick controller and throttle grip. Locations of the components are shown in Figure 00-67.

00.30.1.4 Central Interface Unit. The central interface unit consists of electronic components which establish the required displays, the available modes and options, and the sequence of operational procedures for the crew station interface. An avionic multiplex bus terminal in the CIU provides the data necessary for weapon release computation and weapon delivery mode selection.

00.30.2 Weapons Suspension (94-30). 13 The external stores weapons carriage capabilities permit simultaneous loading of air-to-air missiles, bombs, external fuel tanks, and ECM pods (refer to TO 1F-16A-1-1 and 1F-16A-1-2). The capabilities permit loading a wide variety of store combinations tailored to the multimission requirements of the aircraft. With full internal fuel and 500 rounds of ammunition, a total external load of approximately 11,000 pounds can be carried without exceeding the 35,400-pound maximum takeoff gross weight. Fuel tanks with integral pylons are jettisonable as units from stations 4 and 6. All other pylons, AIM-9 or AIM-120 launchers, and MAU-12 racks are nonjettisonable. Emergency jettison does not apply to nuclear weapons when the MAU-12 racks are locked and consent to release is not given on the nuclear consent switch.

00.30.2.1 ADF For external stores weapons carriage capabilities (refer to TO 1F-16A-1-1 and 1F-16A-1-2) which permit simultaneous loading of AIM-7 missiles, AIM-9 missiles, AIM-120 missiles, external fuel tanks, and also ACMI pods or travel pods. This capability permits loading of various missile combinations for the multimission requirements of the aircraft.

00.30.2.2 Air Combat Maneuvering Instrumentation Pod. An AN/ASQ-T11, T13, T17, T20, T21, T25, T27, T27V(1), or T29 Air Combat Maneuvering Instrumentation (ACMI) pod can be installed on the AIM-9 missile launcher (16S210) at any of the six air-to-air stations (1, 2, 3A, 7A, 8, 9) with the electrical interface accomplished through the AIM-9 umbilical disconnect. An AN/ASQ-T25, T27, T27V(1), or T29 ACMI pod can be installed on the LAU-129 Missile Rail Launcher (MRL) at any of the six air-to-air stations (1, 2, 3A, 7A, 8, 9) with the electrical interface accomplished through the AMRAAM (MIL-STD-1760 Type II) connector. Two of the pods, the AN/ASQ-T11 and T13, are commonly called parallel pods because they do not contain a MIL-STD-1553 serial data bus and cannot receive serial data from the aircraft. The remaining pods are called serial pods because they do contain a MIL-STD-1553 serial data bus and receive air-to-air and air-to-ground weapons data from the aircraft on this bus. Both types of pods can measure aircraft performance parameters with their own Air Data Sensor (ADS) unit and Inertial Sensor Assembly (ISA). The pod provides the data link between the aircraft and the ground portion of the ACMI system. The ACMI ground system is used for evaluation of the training mission and for pilot debriefing.

00.30.2.2.1 13 Since mux wiring is available only at stations 3A and 7A, an AN/ASQ-T17, T20, T21, T25, T27, T27V(1), or T29 ACMI pod is operational only at station 3A or 7A when used with the AIM-9 missile launcher, PN 16S210-883. An AN/ASQ-25, T27, T27V(1), or T29 ACMI pod can be installed on the LAU-129 Missile Rail Launcher (MRL) only at station 3A or 7A.

00.30.2.2.2 13 An AN/ASQ-T17, T20, T21, T25, T27, T27V(1), or T29 ACMI pod is operational at any of the six air-to-air stations (1, 2, 3A, 7A, 8, 9) when used with the AIM-9 missile launcher, PN 16S210-883. An AN/ASQ-25, T27, T27V(1), or T29 ACMI pod can be installed on the

LAU-129 Missile Rail Launcher (MRL) at any of the six air-to-air stations.

00.30.2.3 Remote Interface Units. The RIU is an SMS multiplex terminal and a switching center for power, control, release, stores status, and analog signals. This mechanization, in conjunction with special store umbilical cables, allows a multiple usage of many components, reducing the total logic hardware required. It also assures that modifications required for store complement changes are reduced to a minimum, generally consisting of changes to the CIU and an umbilical cable.

00.30.2.3.1 Four configurations of the RIU's are required to efficiently establish the interface with the various store types: (1) AIM-9 missile, (2) jettison and release, (3) conventional weapon, and (4) nuclear weapon. Store stations 1, 2, 3, 7, 8, and 9 have missile or advanced missile RIU's which are mounted in the launcher and are specifically designed for A-A missiles. The left and right wing leading edges contain jettison and release RIU's for jettison of the tanks on a selective basis and release of stores at major stations. A multiple store RIU is located in the pylons at stations 3, 4, 5, 6, and 7 to control and release conventional weapons which are mounted on multiple ejector racks. A Nuclear Remote Interface Unit (NRIU) is also provided in the centerline pylon and in the pylons at stations 3, 4, 6, and 7 to establish the nuclear system 1 interface.

00.30.2.3.2 ADF Three configurations of the RIU's are installed in the pylons and wings. They are required to efficiently establish the interface with the various missile, fuel tank, and ACMI pod installations (Figure 00-67). The RIU's are as follows: (1) a conventional RIU located at fuselage station 5 (centerline) and wing stations 4 and 6 for use with fuel tanks, (2) an Enhanced Missile RIU (EMRIU) located at wing stations 3 and 7 for use with AIM-7 and AIM-120 missiles, and (3) an Advanced Missile RIU (AMRIU) located at wing stations 1, 2, 8, and 9 for use with AIM-9 and AIM-120. The AMRIU also allows use of the ACMI pod. Jettison and release RIU's are installed in the leading edge of the right and left wings for the jettison and release of selected fuel tanks located on stations 4, 5, and 6.

00.30.3 Gunnery (94-50). The gunnery subsystem uses an M61A1 gun which is internally mounted and consists of a 20mm Gatling gun, an ammunition handling system, and a drive system. The gun (Figure 00-70) is installed aft of the cockpit in the forward center fuselage, with the gun port located in the left strake. The gun port is louvered to diffuse and divert muzzle blast and minimize the effect on surrounding structure, engine, and pilot. To prevent explosive gas concentrations within the aircraft, the gun and ammunition compartments are continuously vented with ram air. During gun firing, a gun gas purge door is opened to increase ram-air flow and a command is sent to the flight control system to automatically compensate for roll and yaw to keep the aircraft on target. Significant gun features are shown in Figure 00-71.

00.30.4 Fire Control Sensing (94-60). Fire control sensing is fully integrated to provide all weather capabilities to penetrate defenses and locate and destroy targets. (Figure 00-72)

00.30.4.1 Fire Control Radar. The multimode F-16 radar provides both air-to-air and air-to-ground modes of operation. In the air-to-air mode, the radar provides the pilot with the capability to detect and track air targets in both lookdown and lookup combat geometries. In the air-to-ground mode, the pilot is afforded the capability to accurately locate ground targets and to correct his navigation coordinates by means of radar fixtaking.

00.30.4.2 Radar Altimeter Antenna. 87 The radar altimeter consists of two antennas and a connector storage panel (growth provisions). (See Figure 00-72.)

00.30.4.3 Combined Altitude Radar Altimeter. 89 The Combined Altitude Radar Altimeter (CARA) provides the fire control avionics with an accurate measurement of altitude from ground level up to 50,000 feet. An altitude low warning function is also incorporated into the CARA and is activated when altitude falls below a pilot-selected minimum altitude threshold. The primary monitor/interface for radar altitude is the head-up display, where altitude information is presented on an altitude scale for display. An ALT LOW indicator

00.30.4.4 Inertial Navigation System. The INS is the primary means of navigation for the aircraft. The INS also supplies aircraft velocity, acceleration, and attitude information for weapon delivery and other fire control functions. The four basic parts of the set are the Inertial Navigation Unit (INU), Fire Control Navigation Panel (FCNP), INU mount, and INU battery.

00.30.4.5 ADF Global Positioning System. The Global Positioning System (GPS) is used as an accurate position and velocity sensor and receives navigation signals from a constellation of orbiting global positioning satellites. From these signals, the position and velocity of the aircraft can be determined with precise accuracy. The GPS and the avionic system, acting together as an integrated system, provide a means of updating the present position and velocity information in the avionic system and then displaying the navigation data to the pilot.

00.30.5 Fire Control Avionics (94-70). The fire control avionics provide radar and visual target identification, computer aircraft-to-target navigational data, and quick-reaction fingertip control of weapons and displays for navigation, air-to-air combat, and air-to-surface weapon delivery. Weapons control is provided by the following: Fire Control Computer (FCC), Head-Up Display (HUD) set, fire control radar set, Radar/Electro-Optical (REO) display set, and Inertial Nav-

igation Set (INS). The locations of the fire control avionics components are shown in Figure 00-73.

00.30.5.1 Head-Up Display. The HUD presents visual flight and weapon delivery information in a forward collimated image that is optically superimposed on the real-world view. The HUD set consists of a display unit, an electronics unit, a rate sensor unit, and a control panel. Locations of the HUD set components are shown in Figure 00-69.

00.30.5.2 Radar/Electro-Optical Display. The REO display system element provides the pilot with a high contrast image of air-to-air radar, ground map radar, and EO weapon information in a Television (TV) format. Symbology generation and format organization for radar data overlay are also accomplished within the REO display. The REO display system element consists of two line replaceable units: the indicator unit and the symbol generator electronics unit. Features of the indicator unit include a high intensity 4-inch usable Cathode-Ray Tube (CRT) that provides viewing capability under high ambient conditions and a 525- or 875-line TV format for the display of radar, weapon, and electro-optical information. Features of the electronics unit include symbology generation, video mixing, sync stripping, and indicator drive circuits.

00.30.5.3 Avionics Multiplex Bus. The Avionics Multiplex (AMUX) bus consists of primary and secondary serial digital data bus systems and matrix assemblies. The AMUX bus matrix assemblies are shown in Figure 00-75.

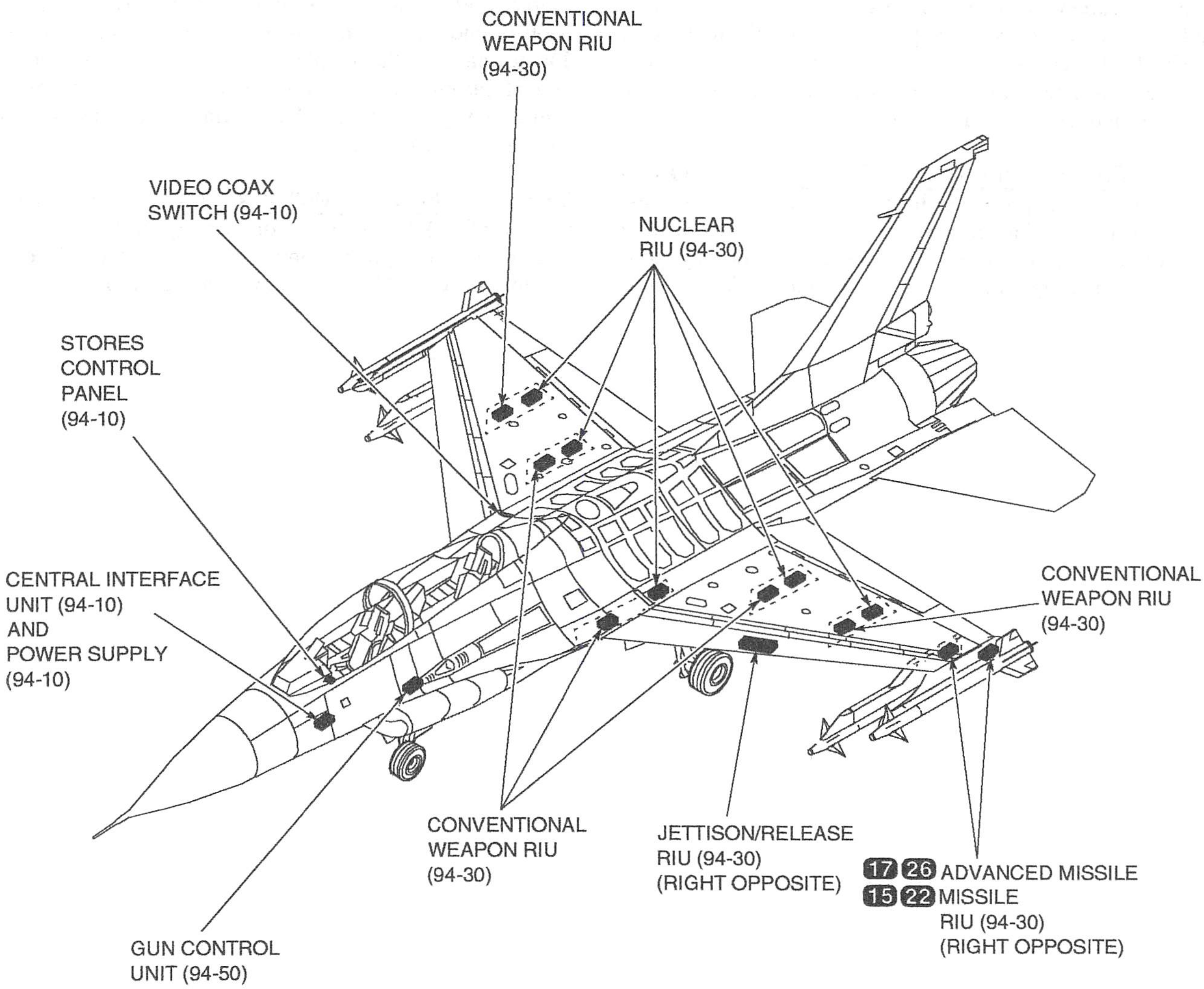


Figure 00-67. Stores Management System Components Location 13.

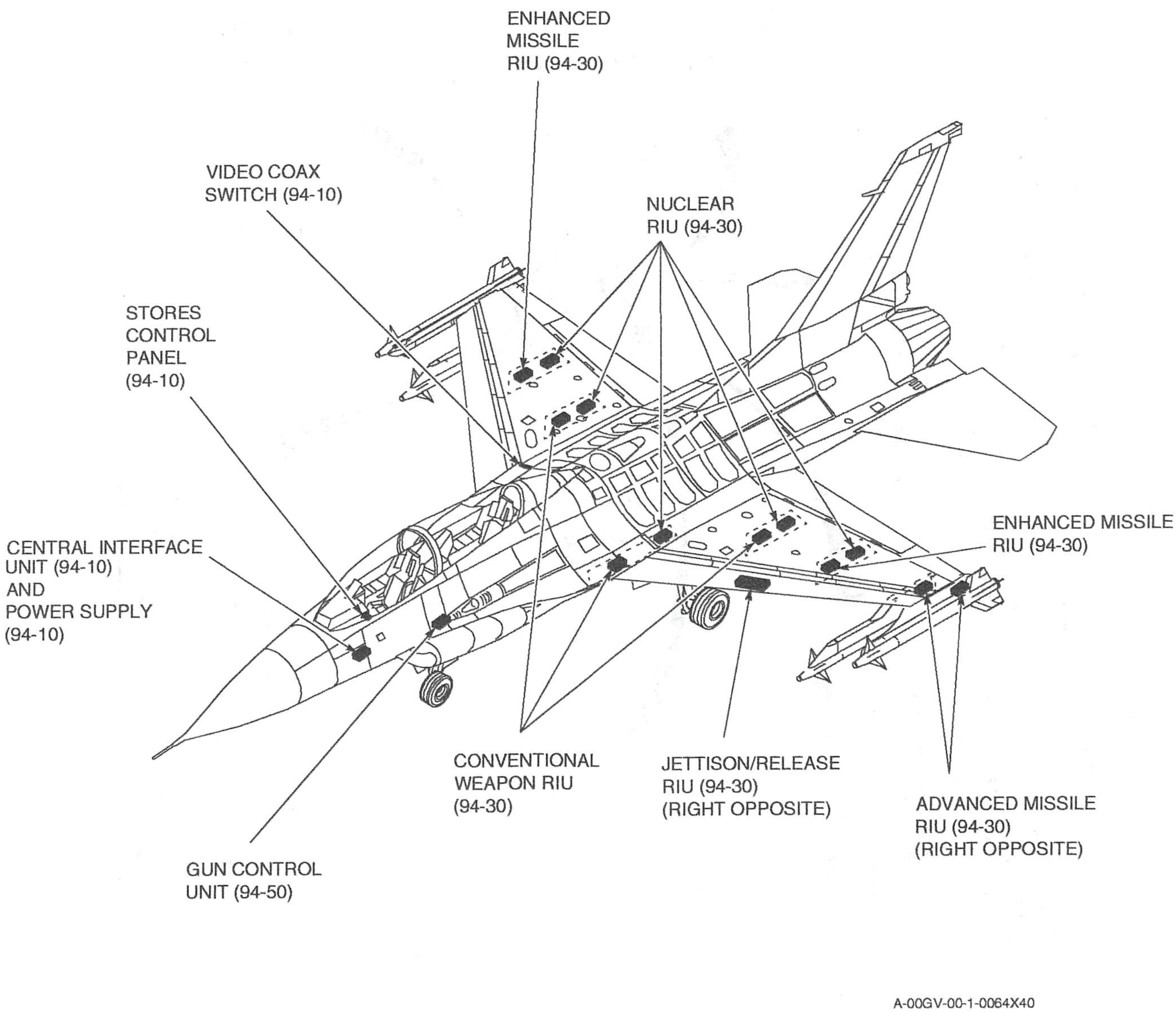


Figure 00-68. Stores Management System Components Location ADF.

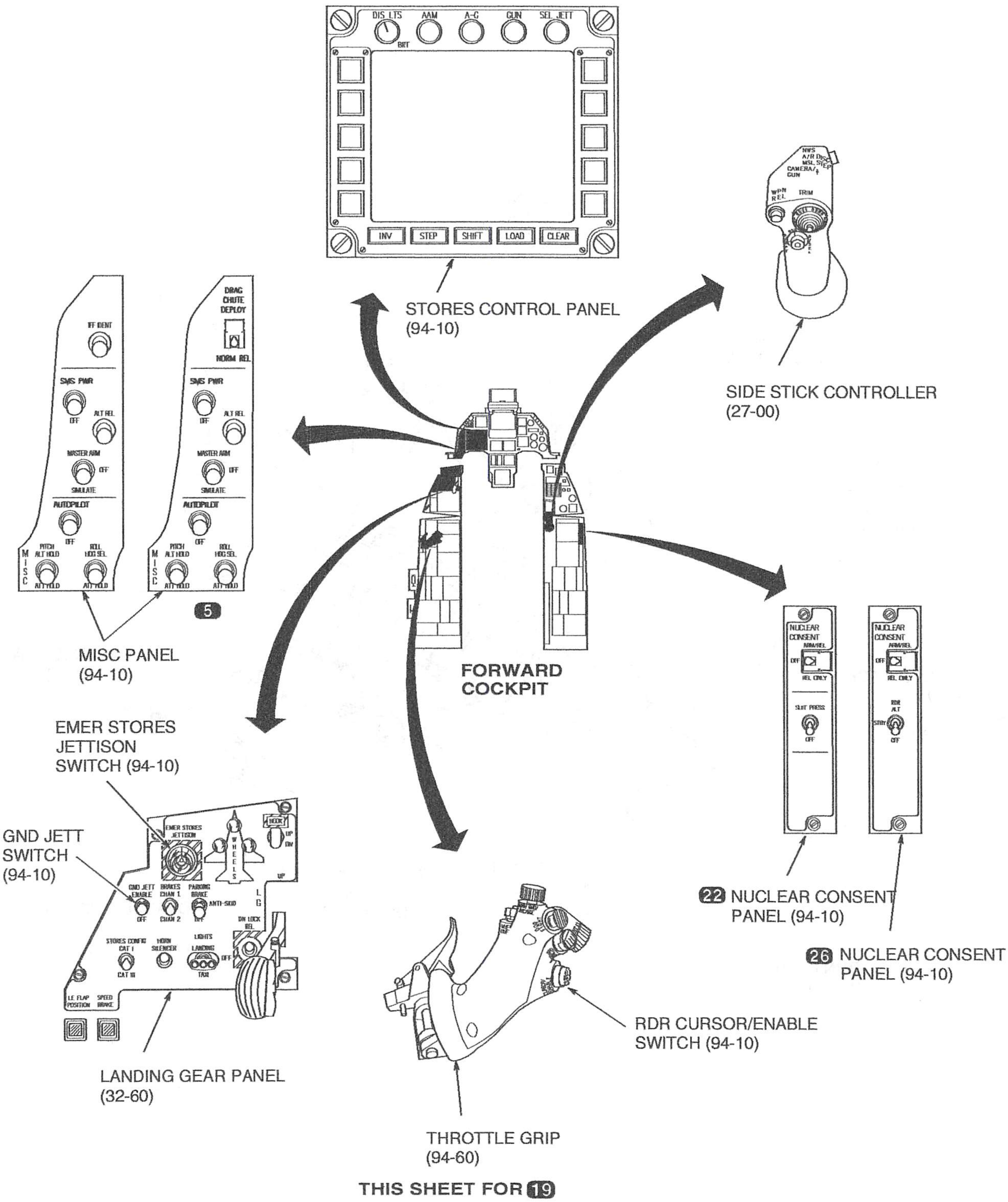


Figure 00-69. Stores Management System Cockpit Controls. (Sheet 1 of 4)

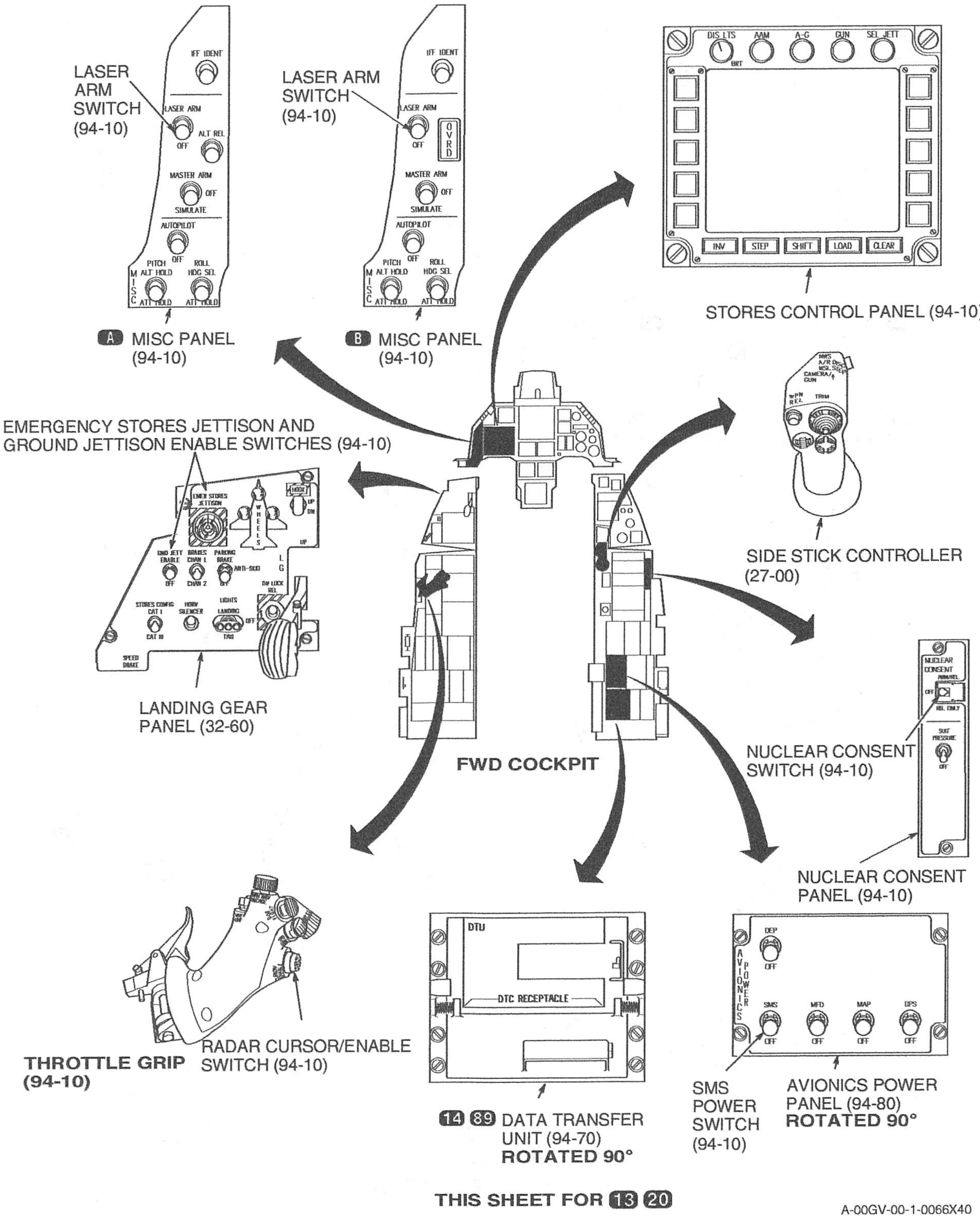


Figure 00-69. Stores Management System Cockpit Controls. (Sheet 2)

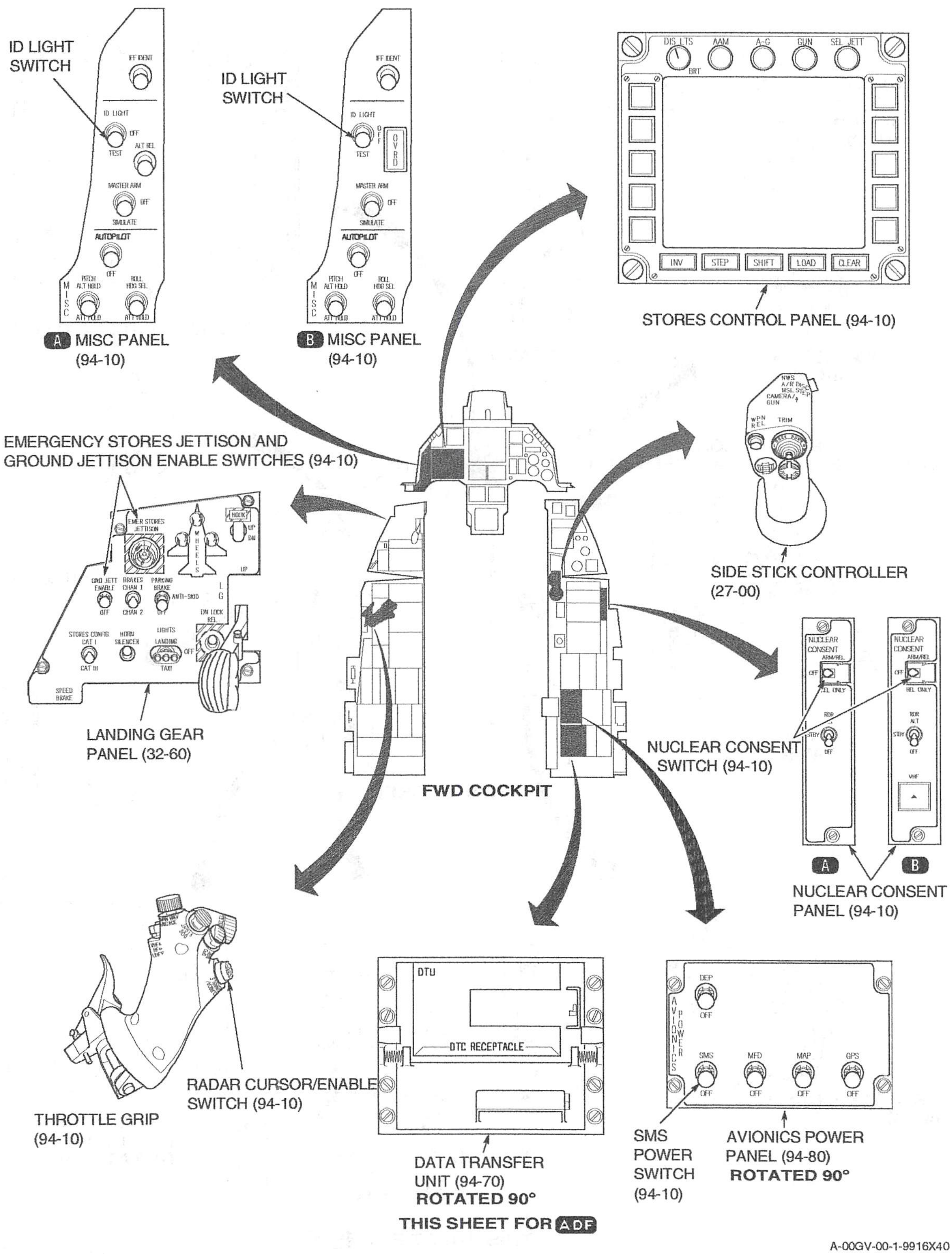


Figure 00-69. Stores Management System Cockpit Controls. (Sheet 3)

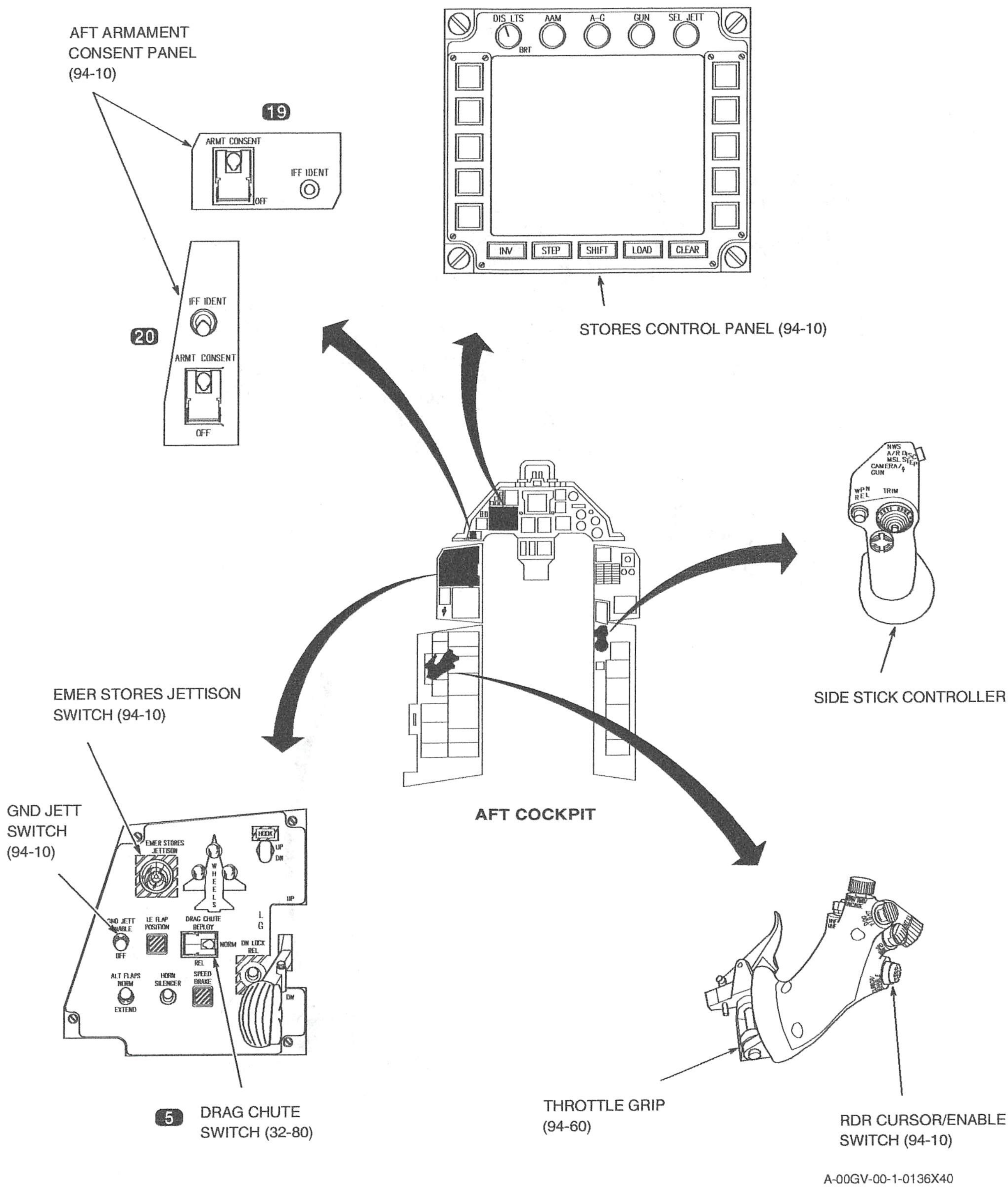


Figure 00-69. Stores Management System Cockpit Controls. (Sheet 4)

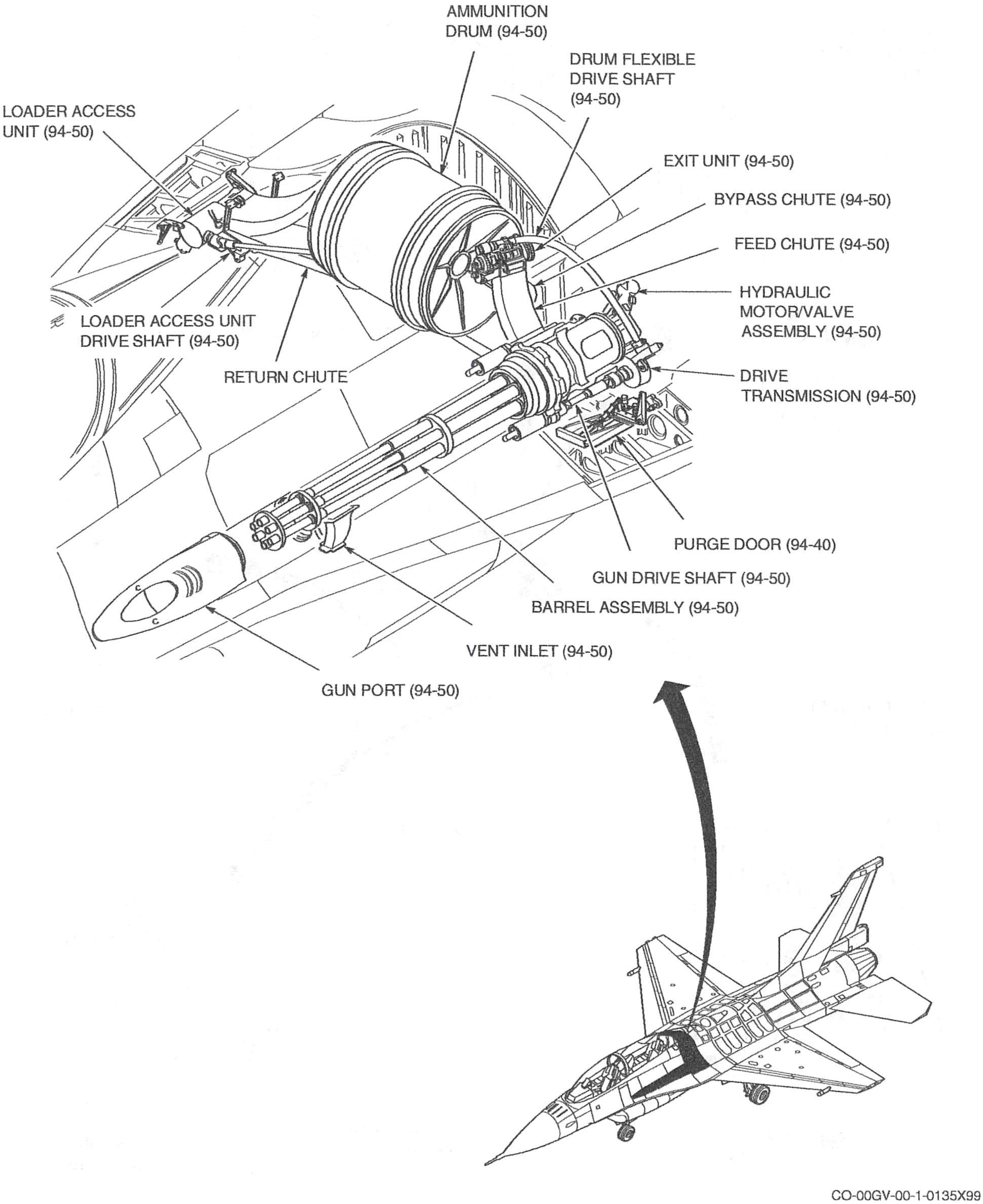
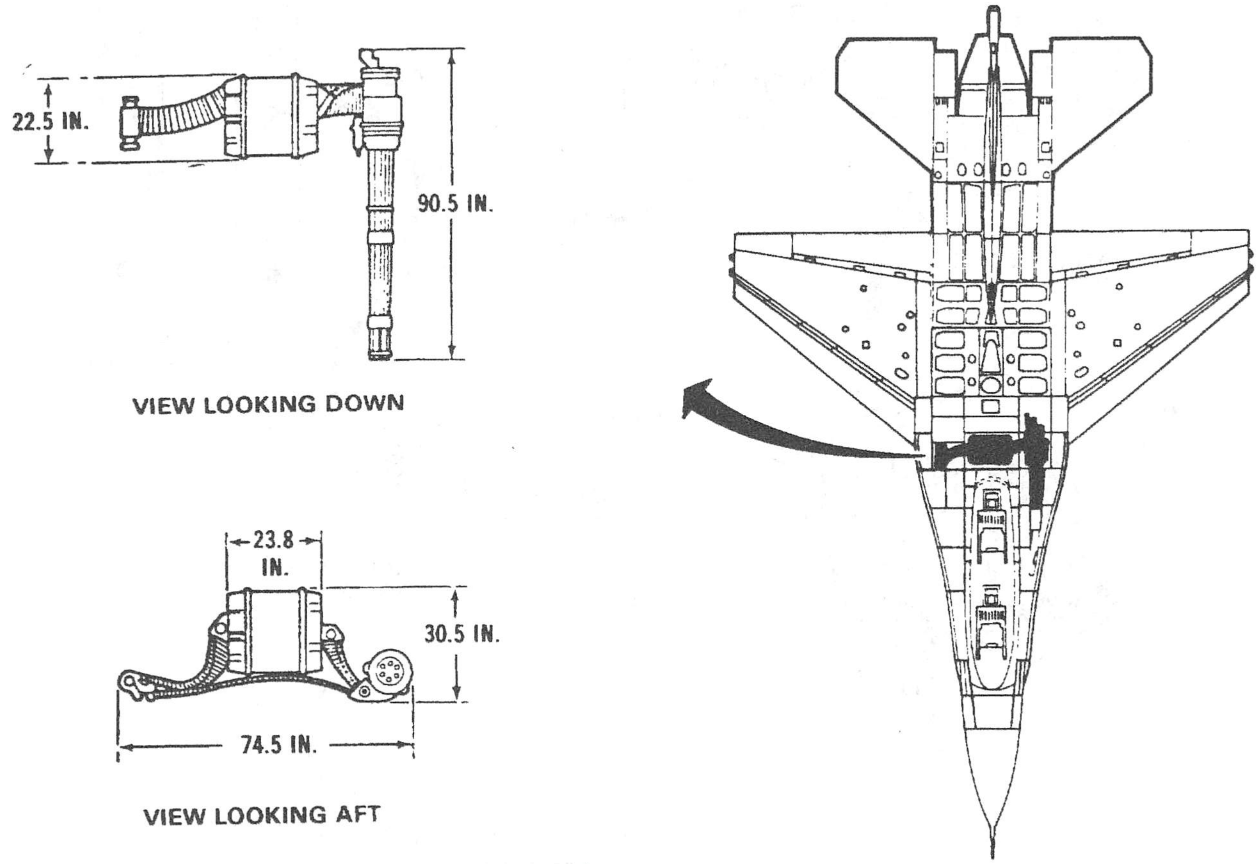


Figure 00-70. M61A1 Gun Major Elements Location.



GUN	M61A1, 20MM
WEIGHT	
FEED SYSTEM	293 LB
GUN	252 LB
AMMUNITION	287 LB
TOTAL	832 LB
FIRING RATE	6000 SPM
AMMUNITION CAPACITY	500 RD NOMINAL
FEED SYSTEM	DOUBLE-ENDED, LINKLESS
DRIVE SYSTEM	HYDRAULIC
POWER REQUIREMENTS	26 GPM @ 1800 PSI P
AMMUNITION	M50 SERIES, 20MM
BARREL LIFE	20,000 - 40,000 RD
ROUNDS LIMITER	FOR TRAINING - PRE-SET
FIRING POSITION	10 O'CLOCK LOOKING FORWARD
ACCELERATION TIME	0.4 SEC
DECELERATION TIME	0.45 SEC

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Figure 00-71. Gun System Features.

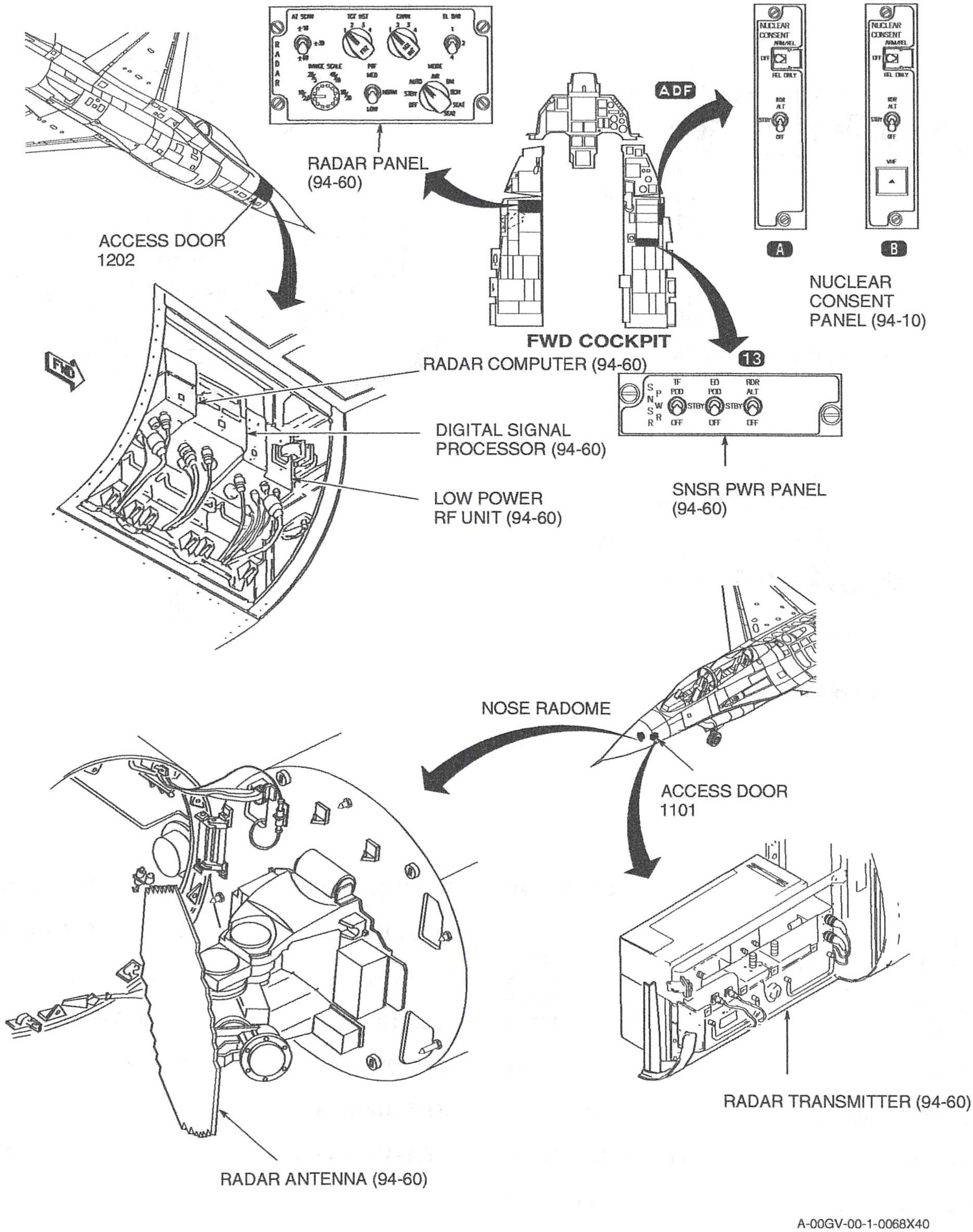


Figure 00-72. Fire Control Sensing Components Location. (Sheet 1 of 2)

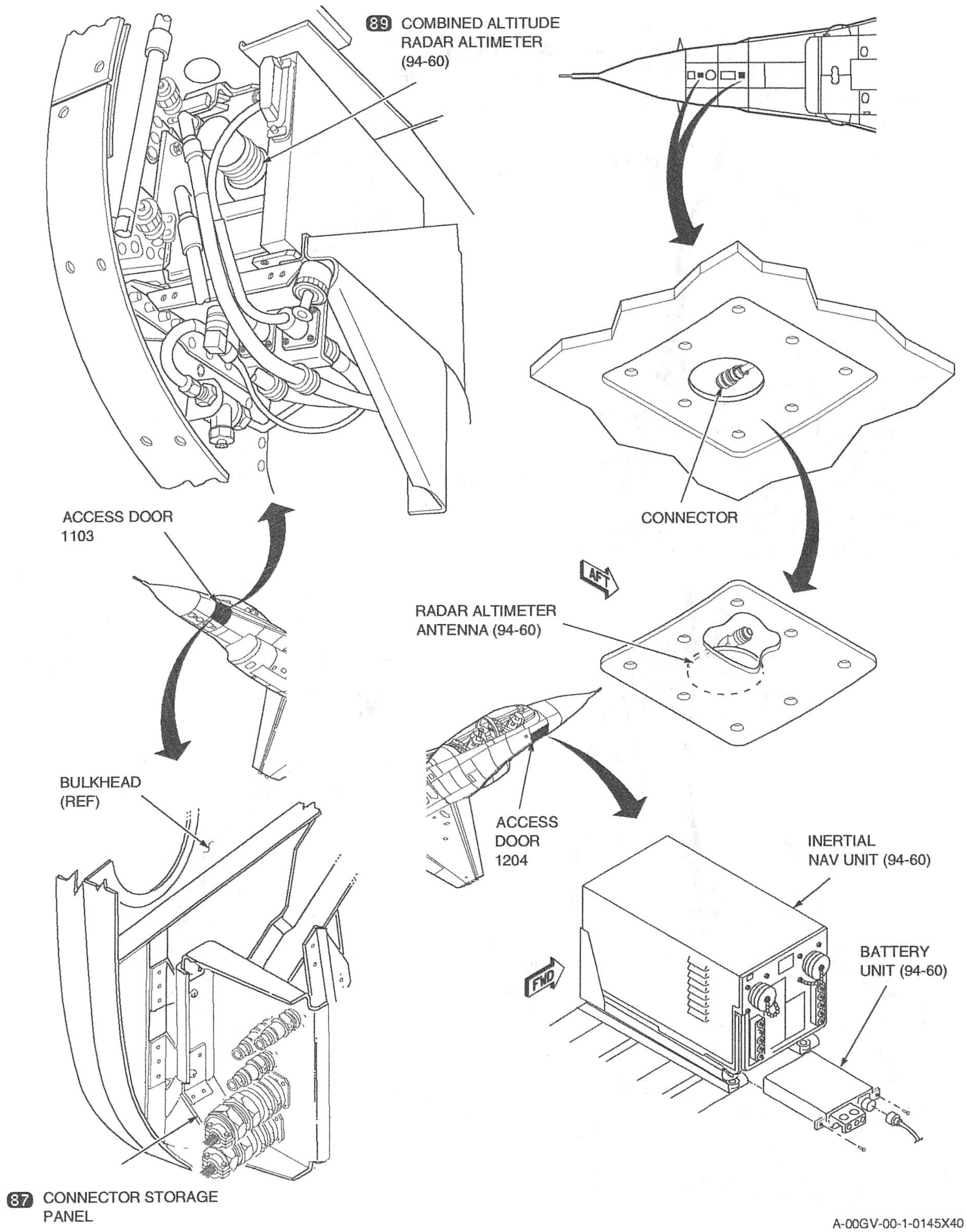


Figure 00-72. Fire Control Sensing Components Location. (Sheet 2)

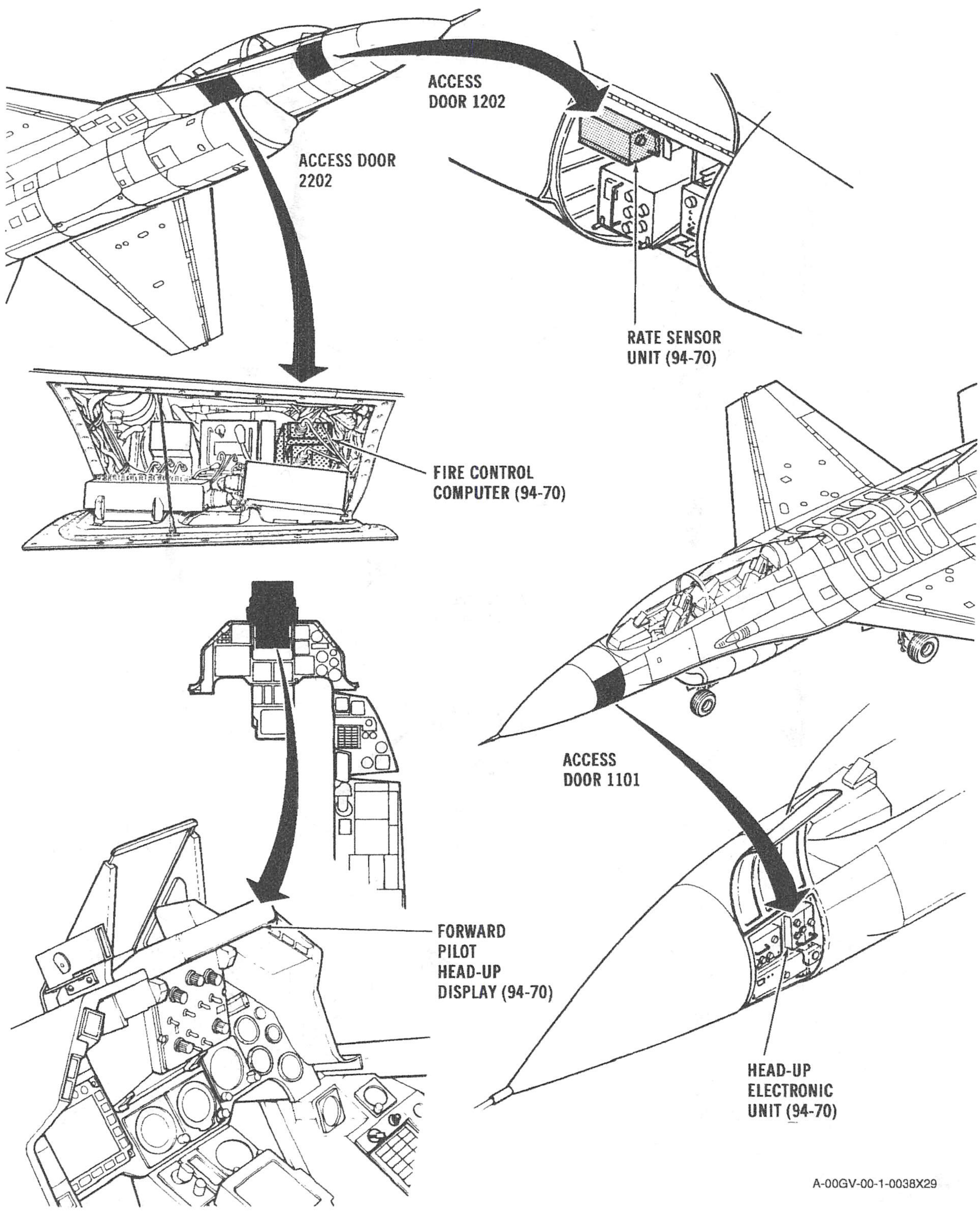


Figure 00-73. Fire Control Avionics Components Location. (Sheet 1 of 2)

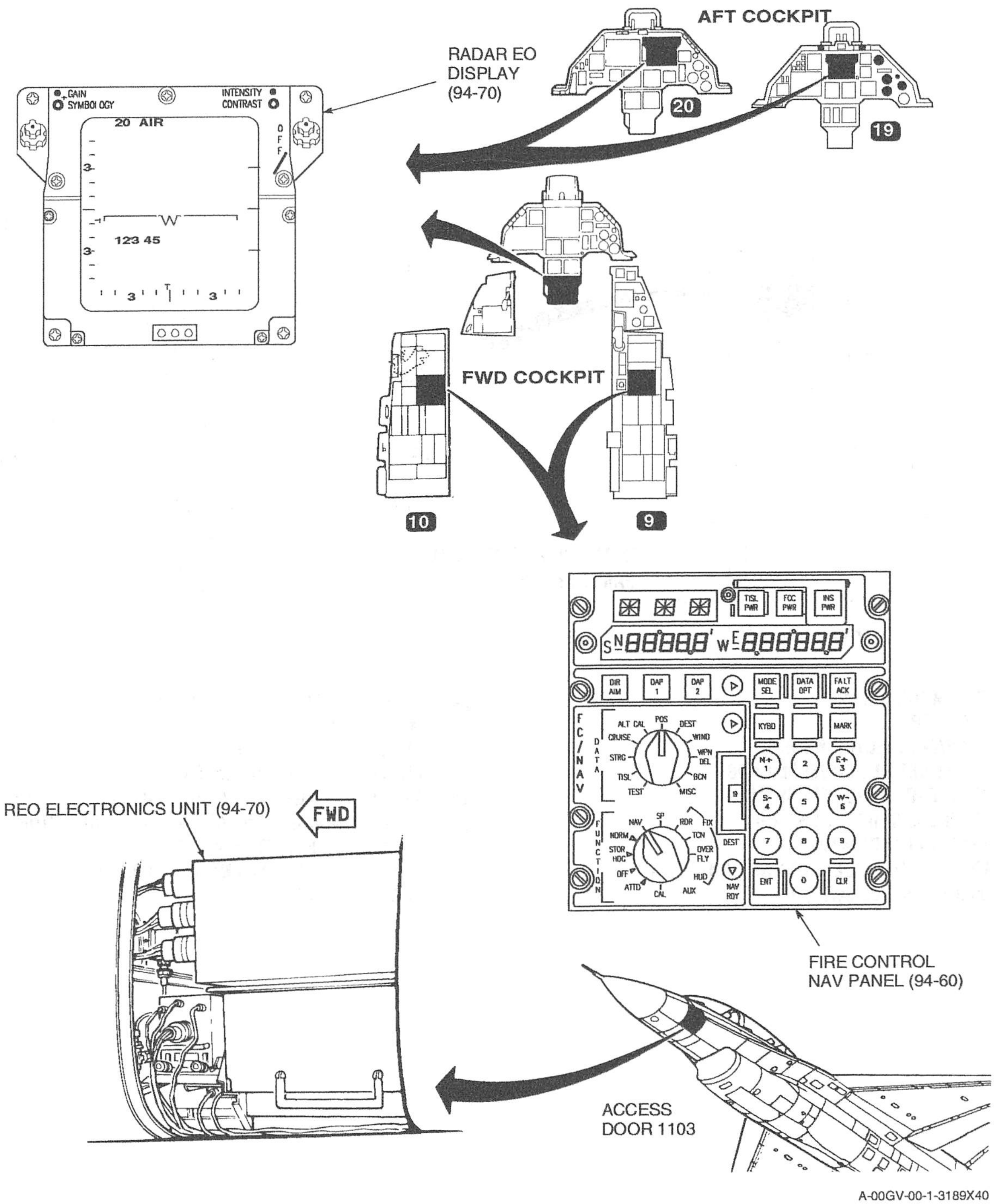
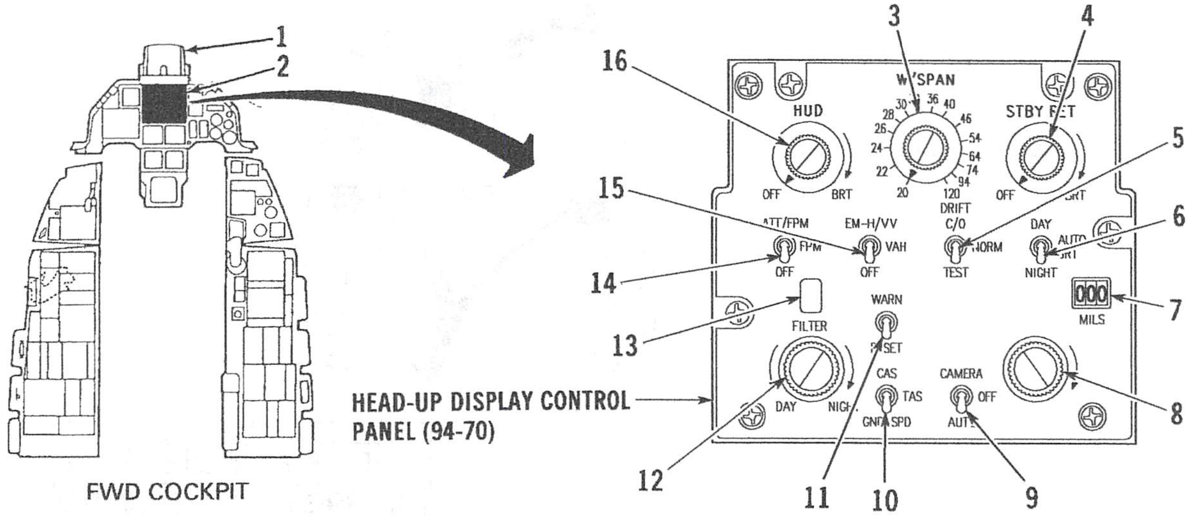


Figure 00-73. Fire Control Avionics Components Location. (Sheet 2)



1. HUD COMBINER GLASS
2. HUD CAMERA
3. WINGSPAN SELECTOR KNOB
4. STANDBY RETICLE CONTROL KNOB
5. DRIFT CUT-OUT AND TEST SWITCH
6. BRIGHTNESS CONTROL SWITCH
7. DEPRESSION INDICATOR
8. STANDBY RETICLE DEPRESSION CONTROL KNOB
9. CAMERA CONTROL SWITCH
10. FLIGHT PARAMETER DISPLAY SWITCH
11. WARN RESET SWITCH
12. FILTER CONTROL KNOB
13. FILTER POSITION INDICATOR
14. ATTITUDE, FLIGHT PATH MODE DECLUTTER SWITCH
15. ENERGY MANAGEMENT AND VELOCITY ALTITUDE HEADING DECLUTTER SWITCH
16. HUD POWER OFF/ON AND BRIGHTNESS CONTROL KNOB

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Figure 00-74. Head-Up Display (HUD) Control Panel.

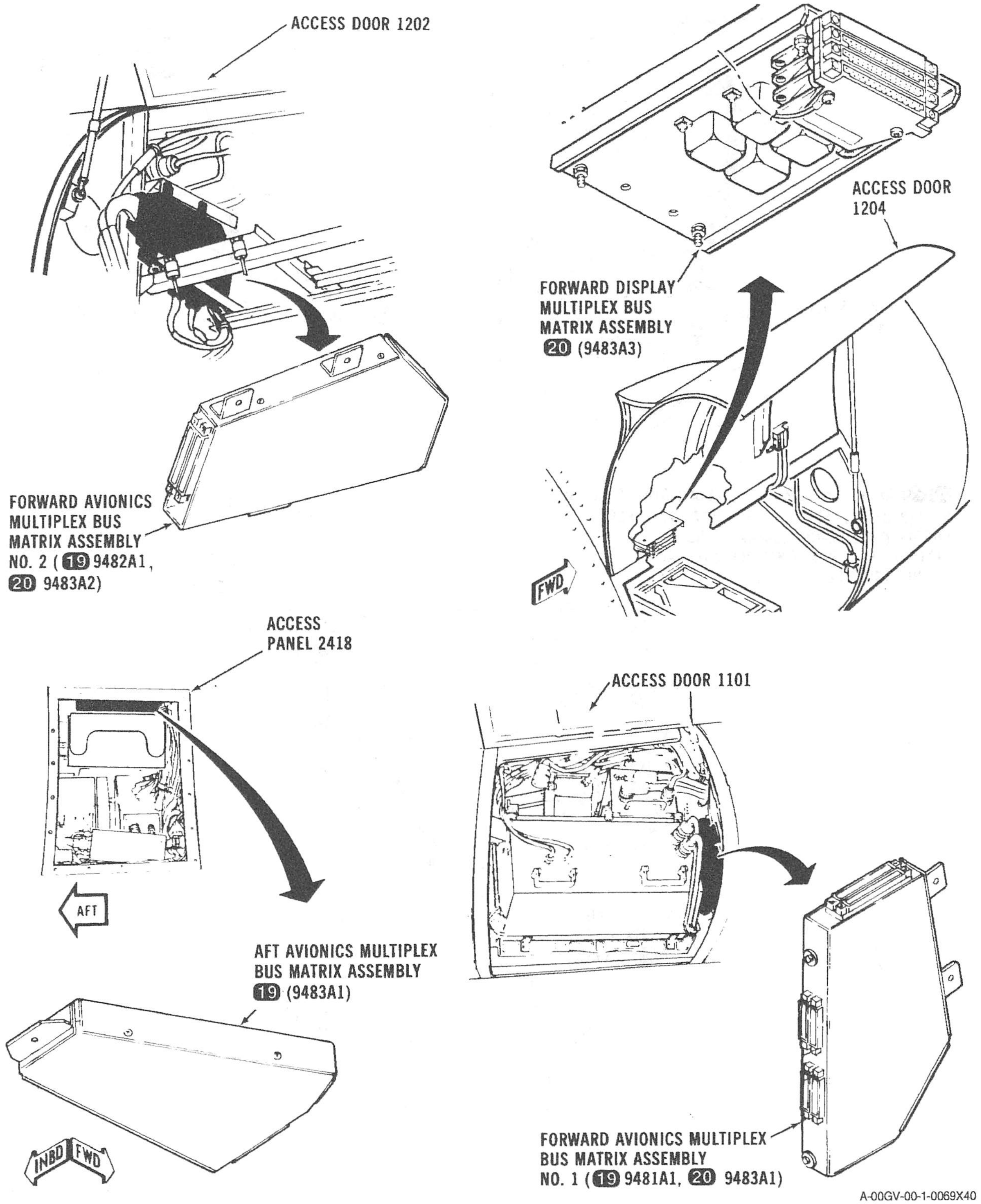

Figure 00-75. Multiplex Bus Matrix Assemblies.

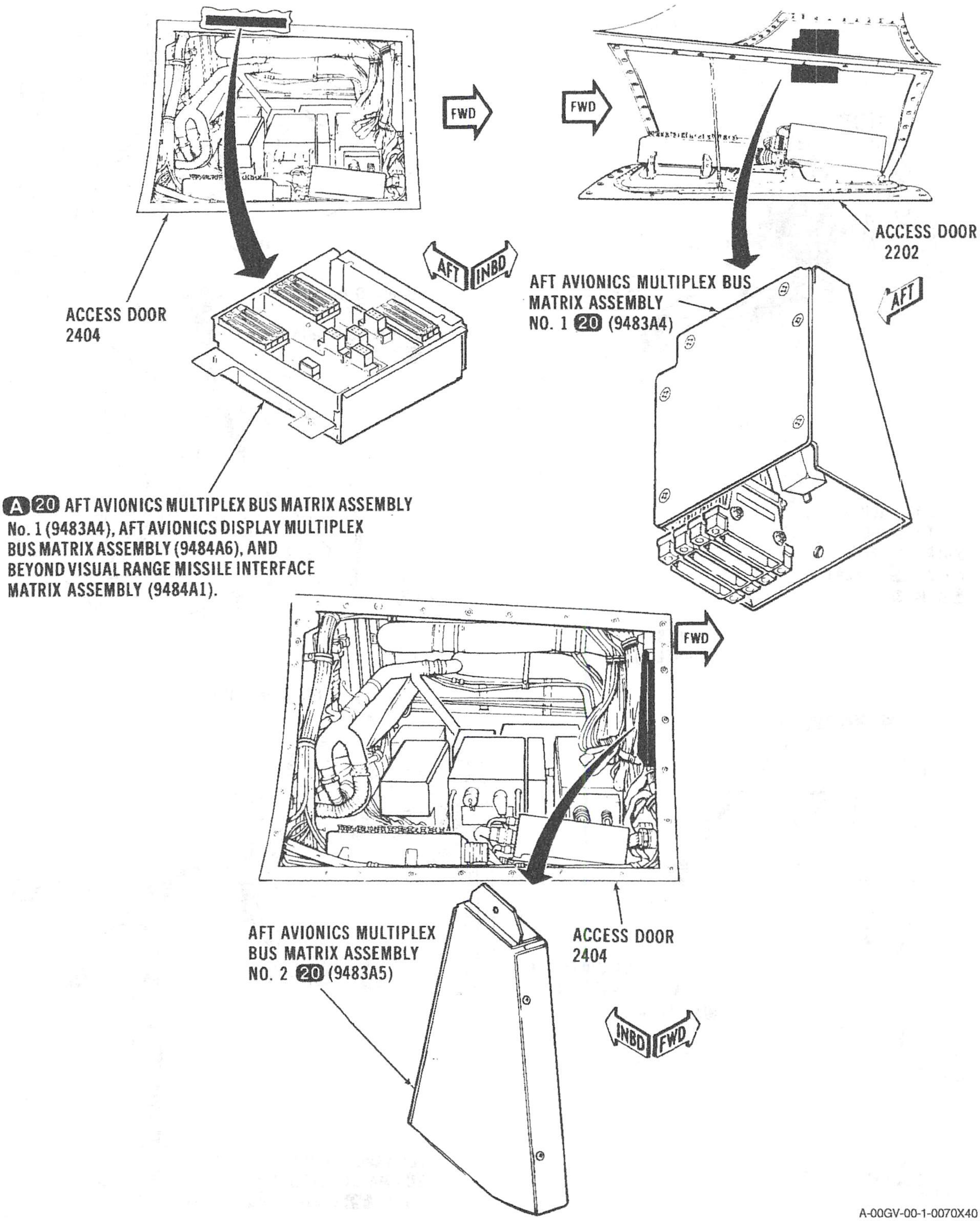

Figure 00-76. Multiplex Bus Matrix Assemblies.

00.31 CREW ESCAPE AND SAFETY (EGRESS) SYSTEM (95-00).

The crew escape system provides a fully automatic, safe escape from the aircraft with a reliable means for recovery and survival. The system consists of an ejection seat, a canopy-jettison subsystem, a crew ejection and recovery subsystem, an emergency oxygen system, a survival kit, and an interfacing subsystem which consists of Ⓐ two sequence valves, Ⓑ four sequence valves and a canopy-seat mechanical interlock. Ⓐ The two principal system functions, canopy jettison and crew ejection/recovery, are controlled and sequenced by the interfacing subsystems. Ⓑ The two principal system functions, canopy jettison and crew ejection/recovery, are controlled and sequenced by one or both pairs of sequence valves. The two seats are interconnected by the ejection mode selection subsystem. Seat major components are shown in Figure 00-77, divergence trajectories in Figure 00-79, and mode envelopes in Figure 00-78. Canopy major components are shown in Figure 00-80, crew escape and safety locations in Figure 00-82, survival kit in Figure 00-83. Crew escape and safety (95-00) consists of the following subsystems:

a. Ejection Seat (95-10)
b. Canopy (95-20)
c. Survival Equipment (95-50)

00.31.1 Ejection Seat (95-10). The ejection seat (Figure 00-77) is open type, providing safe escape at speeds to 600 Knots Equivalent Airspeed (KEAS) and altitudes to 50,000 feet. See Figure 00-78 for mode envelopes. The seat is installed at a back angle of 30 degrees and provided with an elective height adjustment for crew convenience. For emergency egress, the seat is equipped with firing controls, propulsion, pitch control, environmental sensing, emergency oxygen, harness release, drogue and recovery parachutes, recovery sequencing, and survival kit (Figure 00-77). Ⓑ There are three modes of ejection: NORM, AFT, and SOLO. The EJECTION MODE SEL VALVE Figure 00-79, located in the aft cockpit right console, permits the preselection of one of three modes.

00.31.2 Canopy (95-20). The canopy system (Figure 00-80) consists of the following: Ⓐ fixed transparency which is permanently attached to the fuselage, a movable one-piece transparency (windshield-canopy) which is attached to a metal canopy frame around the lower edge and hinged at the aft end, an electromechanical rotary actuator system, a latching system, an emergency jettison system, and a locking mechanism that prevents inadvertent unlatching and opening of the canopy, Ⓑ fixed structural assembly which is permanently attached to the fuselage, a movable two-piece transparency (windshield-canopy) which is attached to a metal frame around the lower edge and hinged at the aft end, an electromechanical linear actuator and linkage system, a latching system, an emergency jettison system, and a locking mechanism that prevents inadvertent unlatching and opening of the canopy. An inflatable seal is installed on the fuselage around the periphery of the movable canopy to prevent cabin pressure leakage. A rubber seal is also installed around the periphery of the canopy to prevent water from leaking into the cockpit when it is not pressurized.

00.31.2.1 Canopy Actuation.

WARNING

- Failure of the canopy actuator could allow the canopy to fall during transit. Keep hands and arms out of the path of canopy travel during opening and closing. Failure to comply may result in injury to personnel.
- If winds exceed 30 knots, open canopy only as far as needed to enter/exit cockpit. Winds above 30 knots are capable of blowing a full open canopy past the full open position if certain conditions exist. Beyond the full open position, canopy hinges may disengage, causing canopy assembly to fall. Decreasing the canopy open angle reduces the possibility of canopy being blown past full open. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

CAUTION

Insure the canopy sills and canopy are free of obstructions and foreign objects when opening or closing the canopy. Failure to comply may result in damage to the aircraft and/or equipment.

The canopy actuation system consists of a 28-volt dc electromechanical Ⓐ rotary actuator, Ⓑ linear actuator and linkage, a manual drive mechanism, and a control switch.

00.31.2.1.1 The switch for electrical operation of the canopy is located on the left side of the cockpit under the canopy lock/unlock lever. The canopy lock/unlock lever has a guard that fits over the canopy switch and prevents actuation of the switch when the lever is in the locked position. A manual drive unit for manual operation of the canopy is located on the left side of the cockpit just behind the throttle. For ground crew operation, an external canopy switch is located at the lower surface of the left strake under the air-conditioning system ground access door Ⓐ 2105, Ⓑ 2107. An external receptacle for a manual drive handle is provided on the opposite side of the manual drive unit. For maintenance purposes, the canopy will be assumed to be open.

00.31.2.2 Canopy Manual Control Handcrank.

WARNING

- Failure of the canopy actuator could allow the canopy to fall during transit. Keep hands and arms out of the path of canopy travel during opening and closing. Failure to comply may result in injury to personnel.
- If winds exceed 30 knots, open canopy only as far as needed to enter/exit cockpit. Winds above 30 knots are capable of blowing a full open canopy past the full open position if certain conditions exist. Beyond the full open position, canopy hinges may disengage, causing canopy assembly to fall. Decreasing the canopy open angle reduces the possibility of canopy being blown past full open. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

CAUTION

Insure the canopy sills and canopy are free of obstructions and foreign objects when opening or closing the canopy. Failure to comply may result in damage to the aircraft and/or equipment.

The handcrank is located on the left side of the cockpit, aft of the throttle. The handcrank is used to manually unlatch and open the canopy or close and latch the canopy. A flush-mounted exterior handcrank receptacle just opposite the inside manual drive is used for ground crew operation.

00.31.2.3 Canopy Jettison. Canopy jettison provides emergency jettison of the canopy for pilot escape or ground rescue operations. The canopy jettison system is actuated automatically during the seat ejection sequence. The canopy may also be jettisoned manually, independent of seat ejection, by means of the pilot's CANOPY JETTISON handle located at the left console or by either of the external canopy jettison handles (one located on each side of the forward fuselage).

00.31.2.4 Emergency Entrance and Crew Rescue Procedures. The following procedures shall be used for canopy opening and crew member rescue. (See Figure 00-82.)

a. If time and conditions permit:

CAUTION

Positioning external canopy switch to the UP position prior to unlocking canopy will pop the canopy circuit breaker or cause damage to equipment.

NOTE

If a 0.149-inch drill rod is not available, a 0.125-inch drill rod may be used.

(1) Using a 1/4-inch drive socket wrench/speed handle, remove plug and insert a 0.149-inch diameter drill rod 8 inches or longer into opening. Push inboard to unlock canopy.

WARNING

If winds exceed 30 knots, open canopy only as far as needed to rescue crewmember. Winds above 30 knots are capable of blowing a full open canopy past the full open position if certain conditions exist. Beyond the full open position, canopy hinges may disengage, causing canopy assembly to fall. Decreasing the canopy open angle reduces the possibility of canopy being blown past full open. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

(2) Position the external canopy switch in UP position.

(3) If canopy remains unopened after 00.31.2.4 Step a(2), insert a 1/4-inch drive socket wrench/speed handle into external canopy handcrank receptacle and rotate clockwise. Approximately 52 revolutions are required to fully open canopy.

WARNING

The canopy jettisons upward and back toward the vertical tail with great force. Stand to the side and slightly aft of canopy to full length of the cable to avoid canopy rocket blast and subsequent death or injury to personnel.

b. If above procedure fails to open canopy or time does not permit, open the canopy emergency release door and move canopy jettison handle out to full length of cable, approximately 6 feet. When the cable tightens, pull handle hard to fire canopy remover.

c. After canopy is open, perform the following rescue steps:

WARNING

To prevent possible seat ejection during rescue, the ejection control safety handle shall be rotated up as shown in Figure 00-82 to prevent possible death or injury to personnel.

(1) Rotate the ejection control safety handle located on the left side of the seat to the full up or vertical position.

(2) Manually disconnect the parachute risers, lapbelt, survival kit straps, and G-suit and separate the crew member from the aircraft

00.31.2.5 Jammed Canopy Emergency Egress Procedures. Perform the following procedures for egress from a jammed canopy.

WARNING

If winds exceed 30 knots, open canopy only as far as needed to rescue crewmember. Winds above 30 knots are capable of blowing a full open canopy past the full open position if certain conditions exist. Beyond the full open position, canopy hinges may disengage, causing canopy assembly to fall. Decreasing the canopy open angle reduces the possibility of canopy being blown past full open. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

CAUTION

While placing the canopy lock handle up or down, be careful not to actuate the internal canopy switch to up. If this occurs, quickly reach behind the lock handle and move the switch to the off position. If this is not accomplished quickly, the canopy actuator will drive the locking cam into a jammed condition and cause an actuator motor burnout.

a. If a canopy lock handle jam occurs, proceed as follows:

(1) Quickly reach behind the lock handle and with one finger move the internal canopy switch down to the off position.

(2) Rotate the internal canopy handcrank in a clockwise direction to relieve the jam; then raise the lock handle to the unlocked position.

(3) Open canopy by placing the internal canopy switch to up. If this will not work, open the canopy by rotating the manual crank in the counterclockwise direction.

b. If the canopy is closed and latched with the lock handle in the up and unlocked position and the actuator will not unlatch or open the canopy by use of the internal canopy switch, proceed as follows:

(1) Open canopy by rotating the internal canopy handcrank in a counterclockwise direction.

NOTE

- If canopy lock handle is jammed, refer to 00.31.2.5 Step a, above.
- A/M32A-60A generator set shall be available at the aircraft if required for crew comfort during unjamming of canopy.
- The egress shop shall be notified for all jammed canopies.

(2) Obtain outside help. If outside help is not available, proceed to 00.31.2.5 Step b(12)).

(3) Verify canopy lock handle is completely unlocked (up).

(4) Attempt to open canopy with external canopy switch. If canopy will not open, insert 1/4-inch drive socket wrench/speed handle in external receptacle and attempt to open canopy manually.

CAUTION

If the new kevlar nose cover, PN 5004176-10 or 5004176-30 is installed, screw used to secure nose cover, forward frame cover, and forward fairing shall not be removed while the canopy is closed and latched. Failure to comply may result in damage to canopy.

NOTE

If canopy does not have a kevlar nose cover installed, proceed to 00.31.2.5 Step b(8).

(5) Drill off screw heads from the lower and forward edge of the left hand forward cover. Do not remove the corner screw that secures the nose cover, frame cover, and fairing to the canopy frame.

CAUTION

Screws shall not be punched through canopy covers. Failure to comply may cause damage to canopy structure.

(6) Rotate frame cover and fairing to gain access to forward hook. Omit 00.31.2.5 Step b(8).

(7) Carefully remove FOD when canopy is opened.

NOTE

The egress mechanic shall determine whether to continue the procedures or perform 00.31.2.5 Step b(11).

(8) Remove left forward side cover from canopy frame. The lower and forward screws have to be drilled out.

CAUTION

Do not apply pry bar directly against canopy structure while prying hook linkage aft or damage to canopy may occur.

NOTE

- If 00.31.2.5 Step b(9) fails to open the canopy, repeat 00.31.2.5 Step b(8) and 00.31.2.5 Step b(9) on the right side and pry aft on both sides simultaneously.
- Use wood or metal block between canopy structure and hook linkage for proper leverage.

(9) Pry aft on the forward end of the hook linkage while manually or electrically operating the actuator toward the open position. After the hooks are unlatched, pry up and lift on the forward end of the canopy frame while continuing to operate the actuator toward the open position until the canopy is open; then install service equipment canopy support to hold canopy open.

NOTE

Obtain a power saw with a carbide-tipped blade from the fire station.

(10) If canopy actuator is jammed and the linkage cannot be moved, remove aft transparency or cut hole as required to remove A actuator linkage bolt, B canopy actuator release bolt; then reaccomplish 00.31.2.5 Step b(9).

(11) Cut hole in transparency large enough for removal of personnel.

WARNING

Verify that no personnel are near or behind the aircraft when the canopy is jettisoned. Failure to observe this warning could result in injury or death to personnel.

NOTE

00.31.2.5 Step b(12) will be accomplished if no outside help is available and all of the above procedures failed to free the jammed canopy.

(12) Pull internal canopy jettison handle to jettison canopy.

00.31.3 Survival Equipment (95-50). The survival kit (Figure 00-83) consists of a fabric case which houses a life raft, a rucksack, and a container for stowage of survival equipment. A URT-33 beacon and antenna are installed on the outside of the kit. The kit may be deployed automatically or manually as the crewman selects.

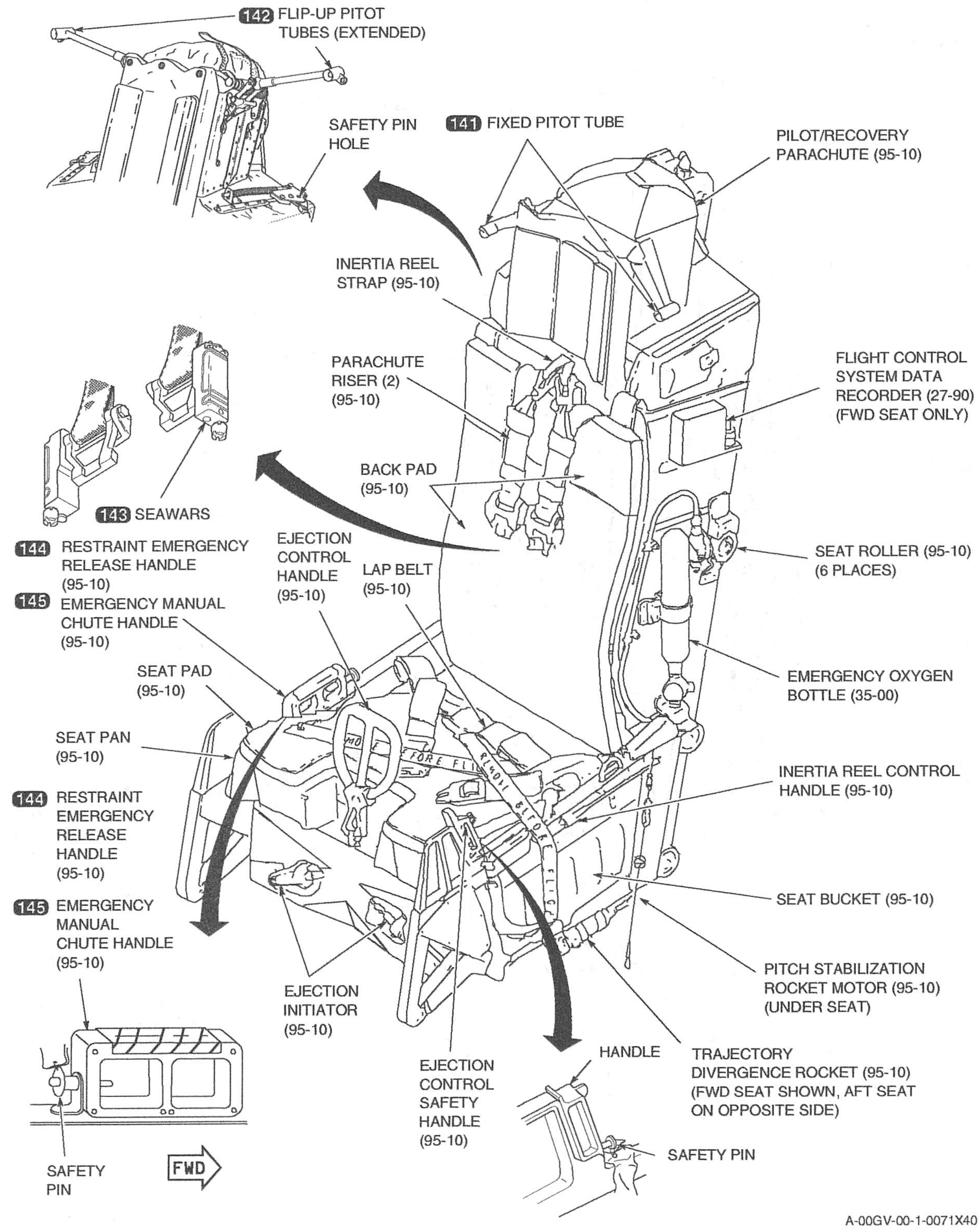

Figure 00-77. Ejection Seat Assembly. (Sheet 1 of 2)

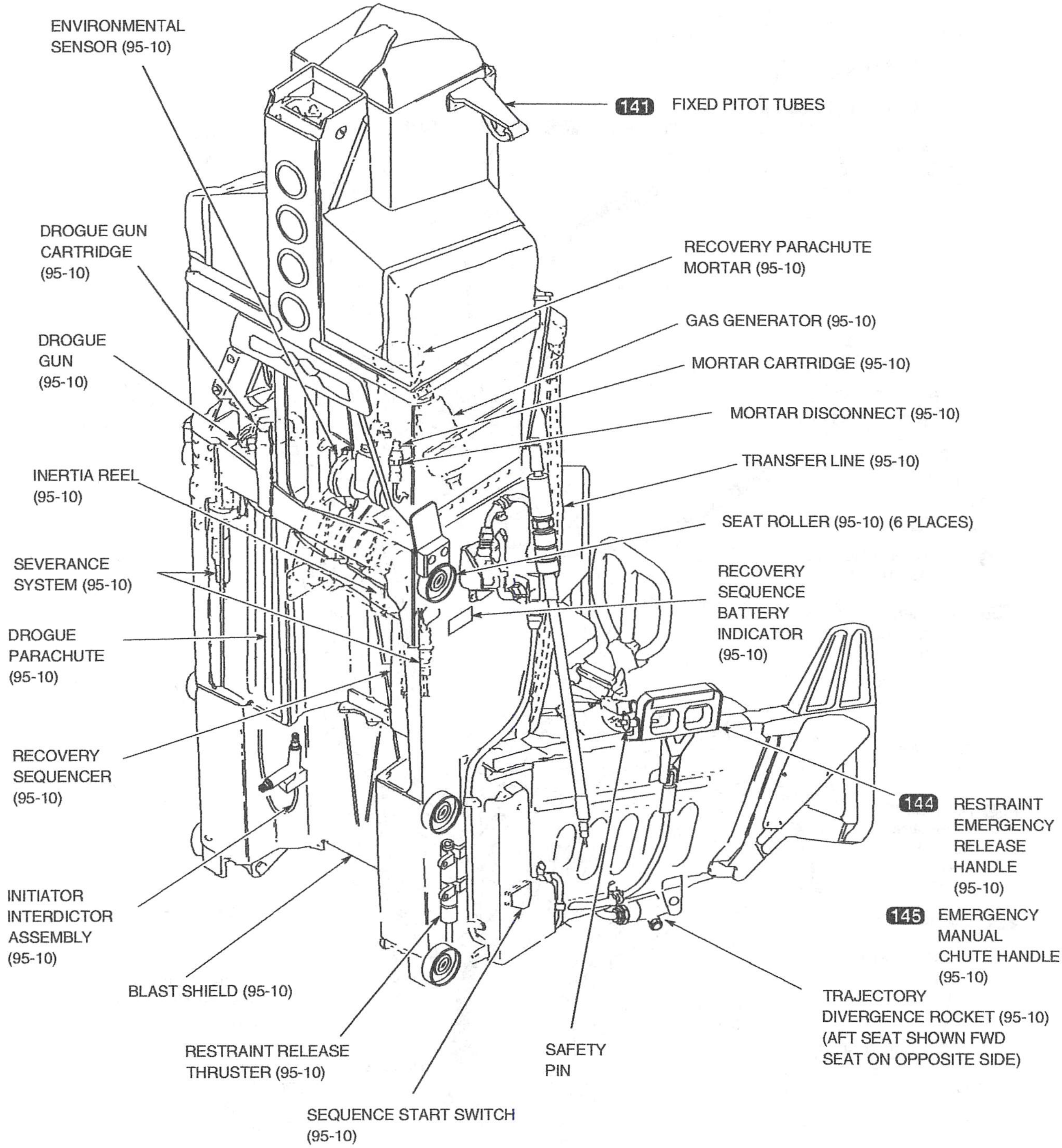

Figure 00-77. Ejection Seat Assembly. (Sheet 2)

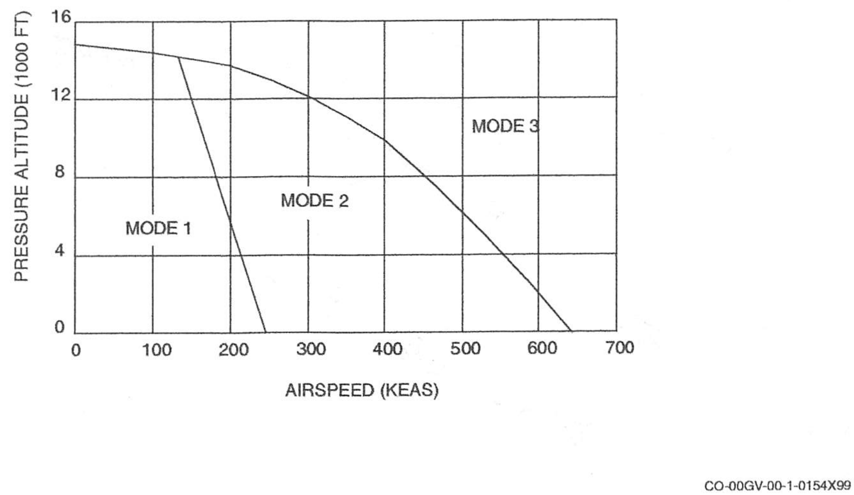

Figure 00-78. Mode Envelopes.

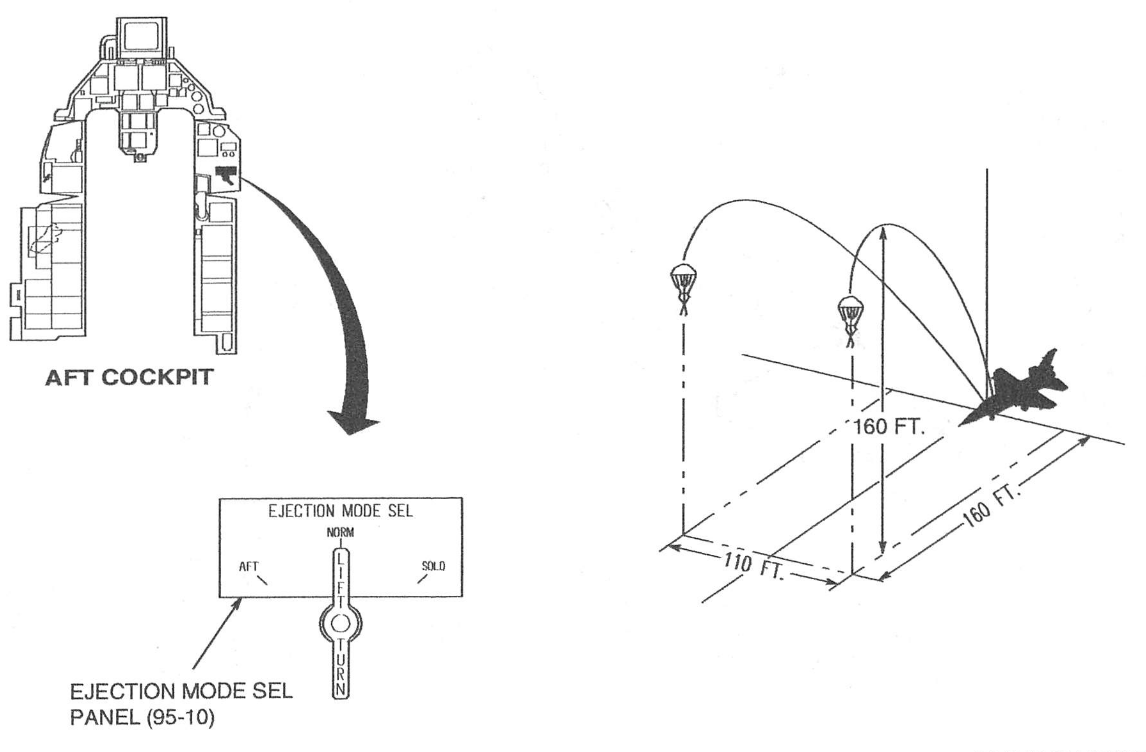

Figure 00-79. Ejection Modes/Divergence Trajectories.

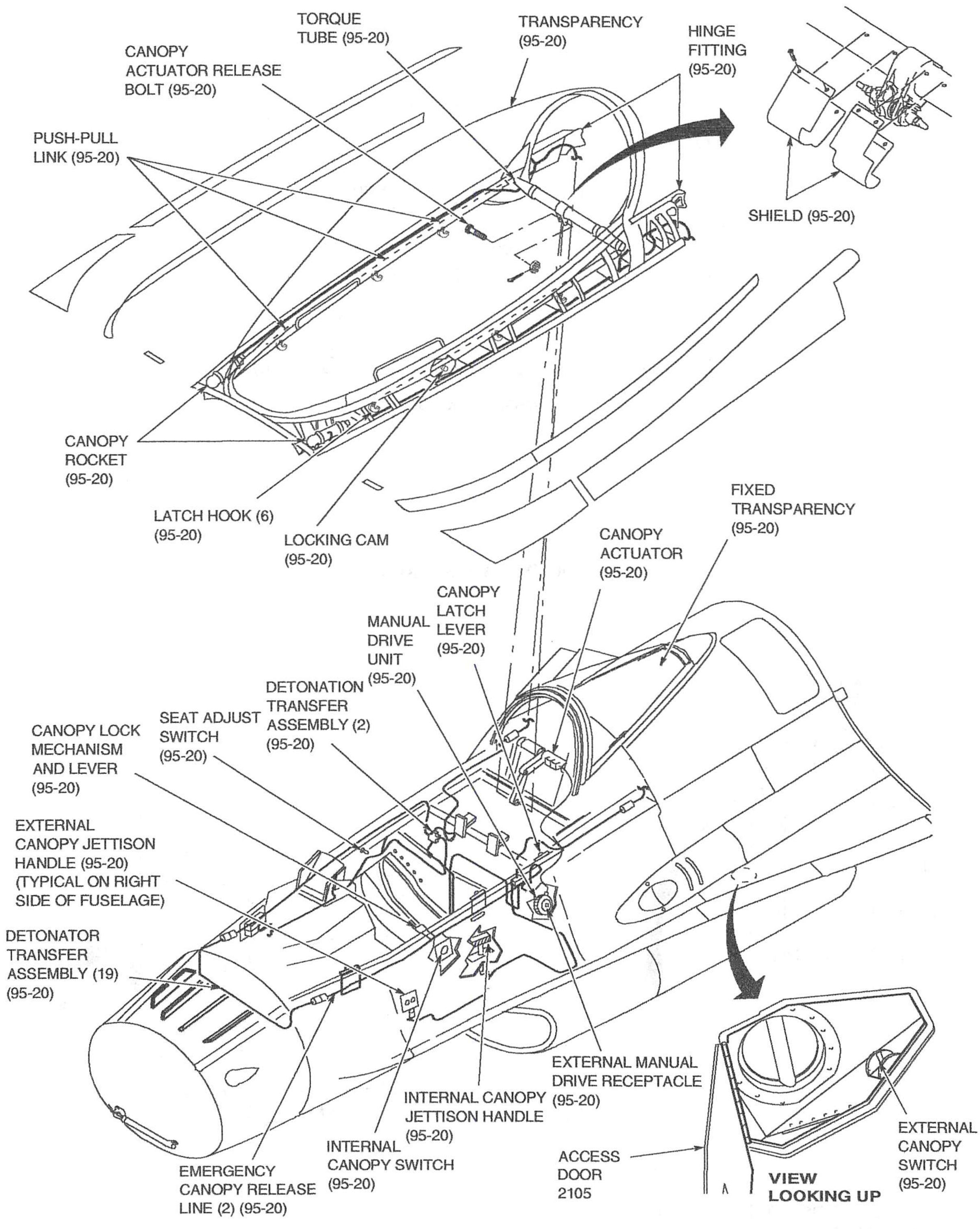

Figure 00-80. Canopy System Components Location Ⓐ.

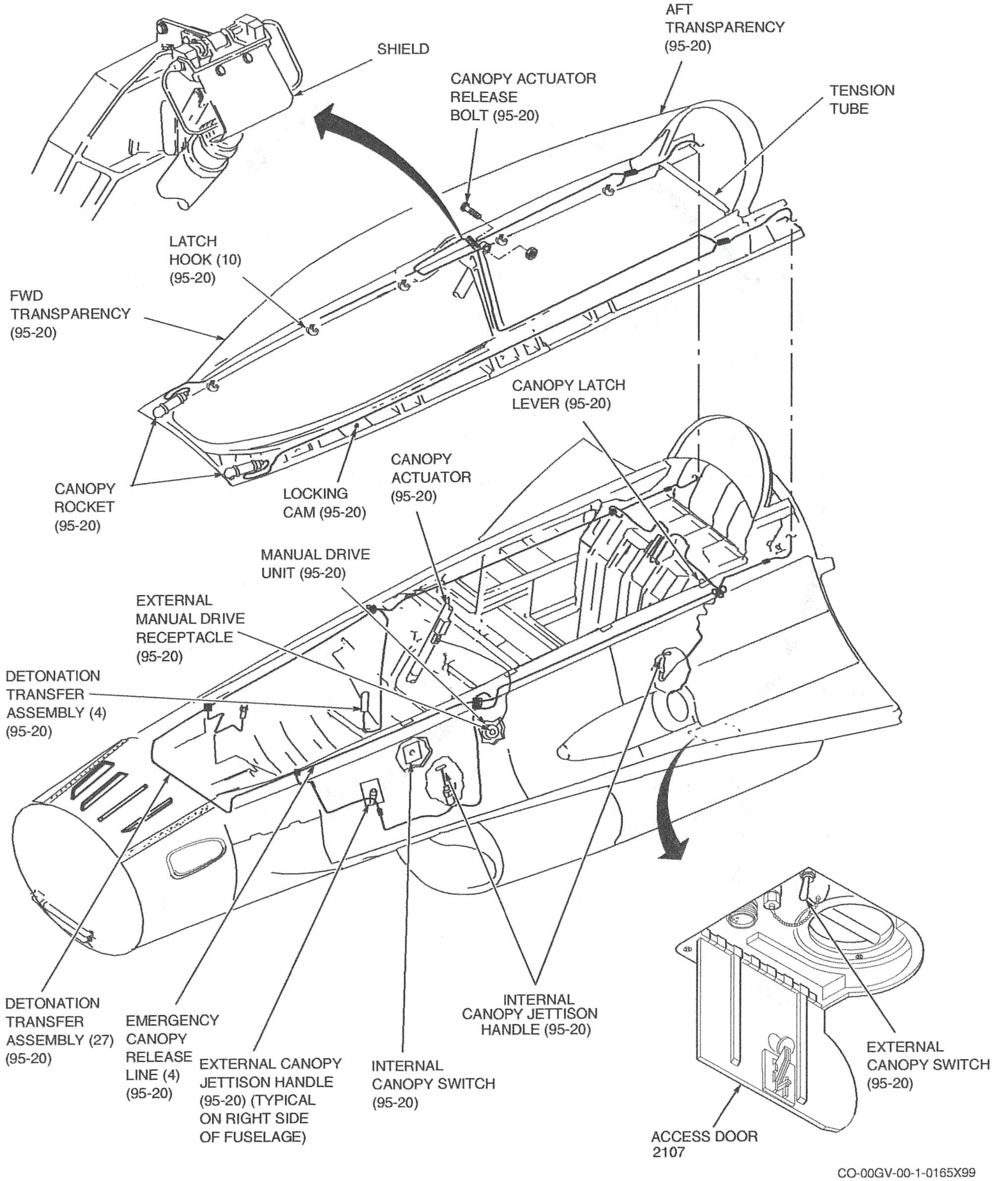

Figure 00-81. Canopy System Components Location Ⓑ.

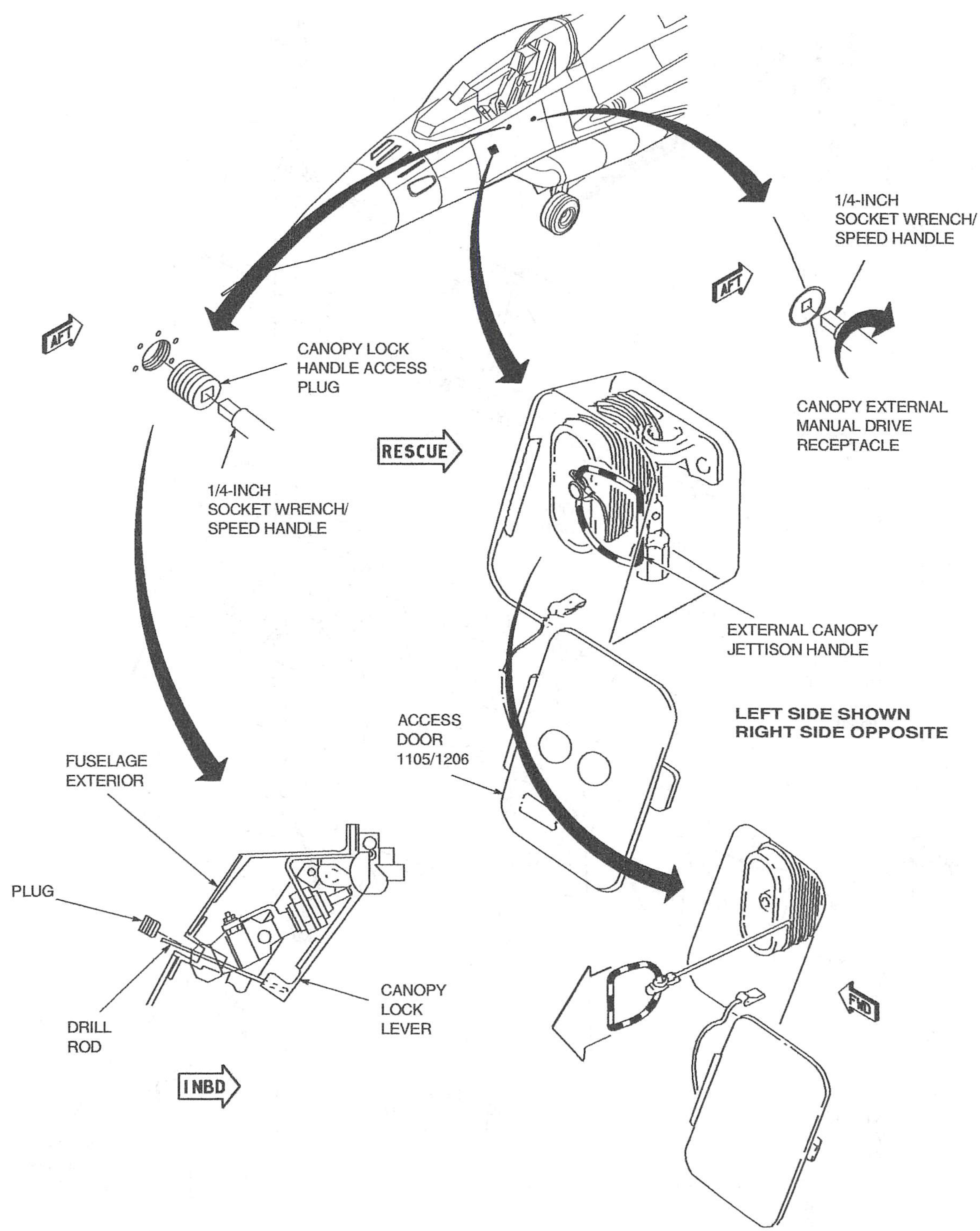

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Figure 00-82. Crew Escape and Safety. (Sheet 1 of 4)

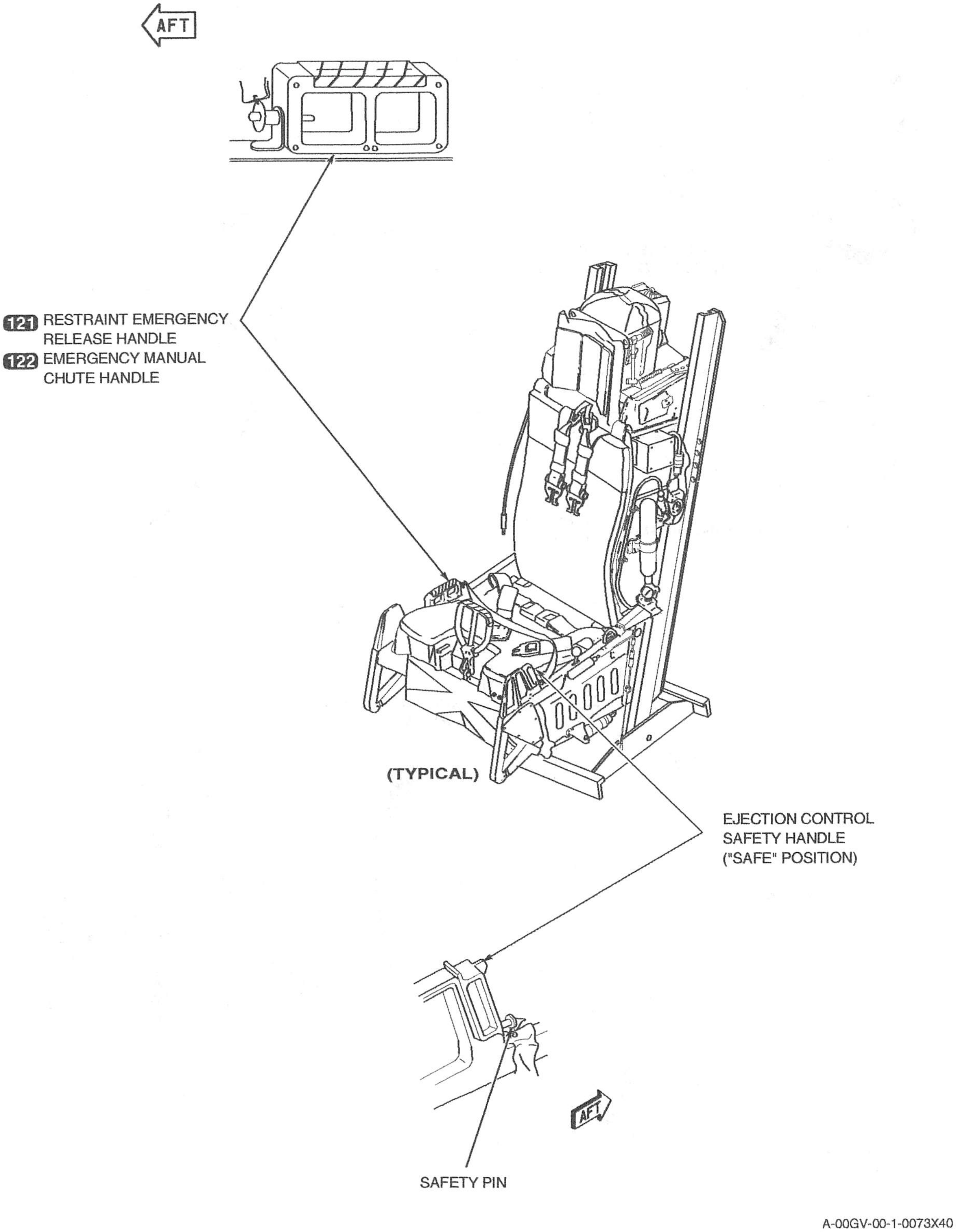

Figure 00-82. Crew Escape and Safety. (Sheet 2)

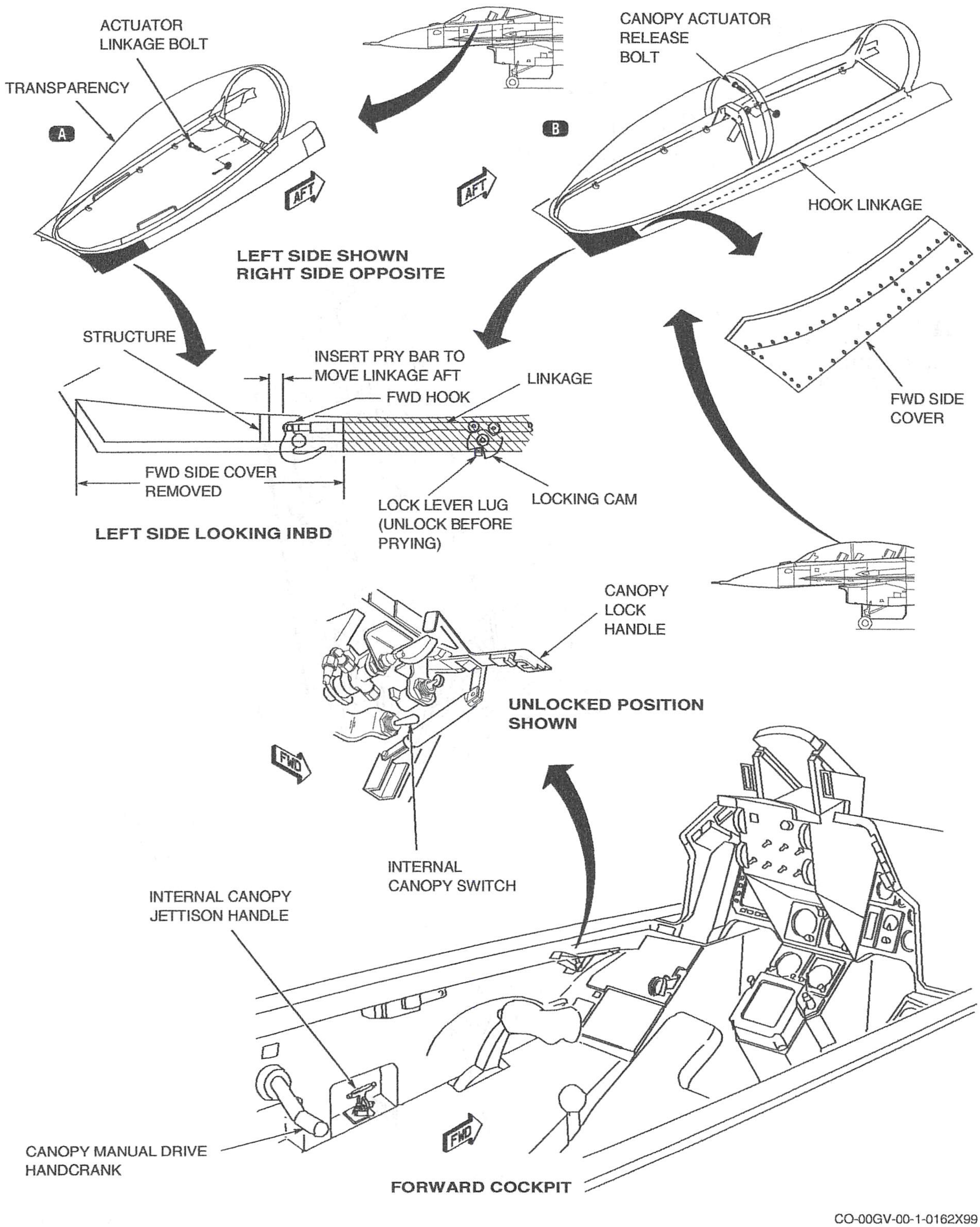

Figure 00-82. Crew Escape and Safety. (Sheet 3)

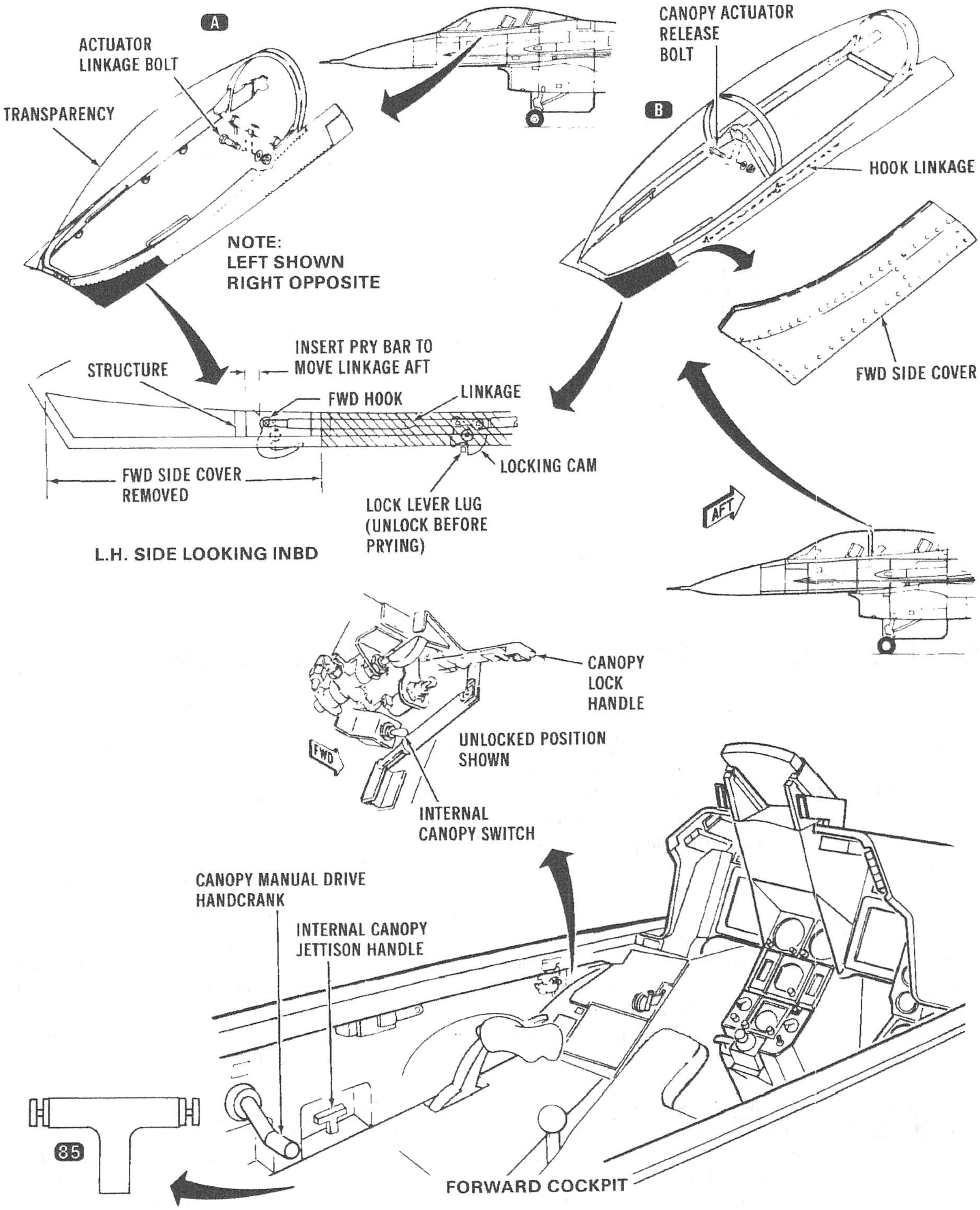

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Figure 00-82. Crew Escape and Safety. (Sheet 4)

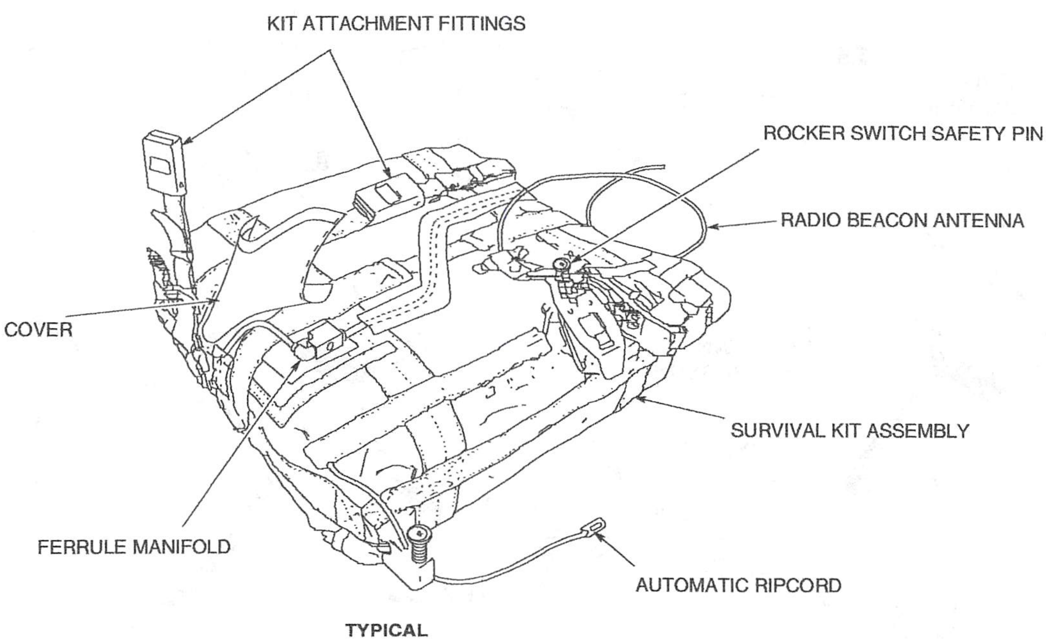


Figure 00-83. Survival Kit.

00.32 PENETRATION AIDS AND ECM SYSTEM (99-00).

The penetration aids and ECM system consists of an AN/ALR-69 threat warning set, a C-10724/ALQ A 86C-9492B/ALQ electronic countermeasures pod control unit, a modified AN/ALE-40 chaff/flare dispenser set, and an interference blanker unit. The function of these units is to counter enemy tracking systems and enhance successful completion of mission (Figure 00-84).

00.32.1 Threat Warning (99-10). The AN/ALR-69 threat warning system provides visual and audible indications of tracking radars that threaten imminent danger. A communications link is provided between the threat warning system and one of the ECM pod stations. The threat warning system detects Airborne Interceptors (AI), Antiaircraft Artillery (AAA), and Surface-to-Air Missile (SAM) guidance radars.

00.32.2 Electronic Countermeasures (99-20). The C-10724/ALQ A 86 C-9492B/ALQ electronic countermeasures pod control unit is used to control ECM pods (AN/ALQ-119 or AN/ALQ-131) with analog commands or with Pulse Position Data (PPD) multiplex commands, depending on the type of pod(s) being carried. The unit can control one analog pod and either one or two PPD pods simultaneously. The ECM station select panel allows installation of the ECM pods on any of the external stores stations (3, 5, 7) designated for pod carriage (Figure 00-89).

00.32.3 Chaff/Flare Dispenser Set (99-30). 128The chaff/flare dispenser set is composed of a chaff/flare control panel, dispense button, programmer, sequencer switch, EMI filter, and two dispensers. Each dispenser holds one cartridge module which contains 30 chaff cartridges or 15 flares. The dispensers are located in the tail area forward and inboard of the left and right horizontal stabilizers. (Refer to Figure 00-90.)

00.32.4 Chaff/Flare Dispenser Set (99-30). 129 The side stick controller paddle switch has been integrated into the dispensing system, which allows hands-on capability. The paddle switch manually initiates chaff/flare dispensing commands for selected disposables when enabled by the CHAFF/FLARE panel control settings. The dispenser button will effect the ejection of one group of chaff cartridges in succession (MULT) only. All other functioning is as described in paragraph CHAFF/FLARE DISPENSER SET (99-30) (00.32.3).

00.32.5 Pylon Integrated Dispenser System (PIDS-3) (99-30). 146PIDS is designed to expand the wing weapon pylon capability to include dispensing of chaff (Figure 00-88). Modified pylons which work in conjunction with the wheel well ECM select switch assembly (Figure 00-87) AN/ALE-40 chaff/flare dispensing set. Modified pylons installed on stations 3 and 7 provide mounting and dispensing of 3 standard ALE-40 chaff magazines per pylon.

00.32.6 Aerial Gunnery Target Set (A/A37U-36). The A/A37U-36 Aerial Gunnery Target Set (AGTS-36) is an in-

flight, deployable towed target designed for aerial gunnery training (Figure 00-86). The AGTS-36 stows, launches, reels out, tows, reels in, and recovers the TDK-39/A37U target set. The system is designed to be operated at aircraft stations 3 or 7 and is used with the MAU-12 bomb ejector rack. An AGTS-36 control display panel is installed in lieu of the electronic countermeasures pod control unit.

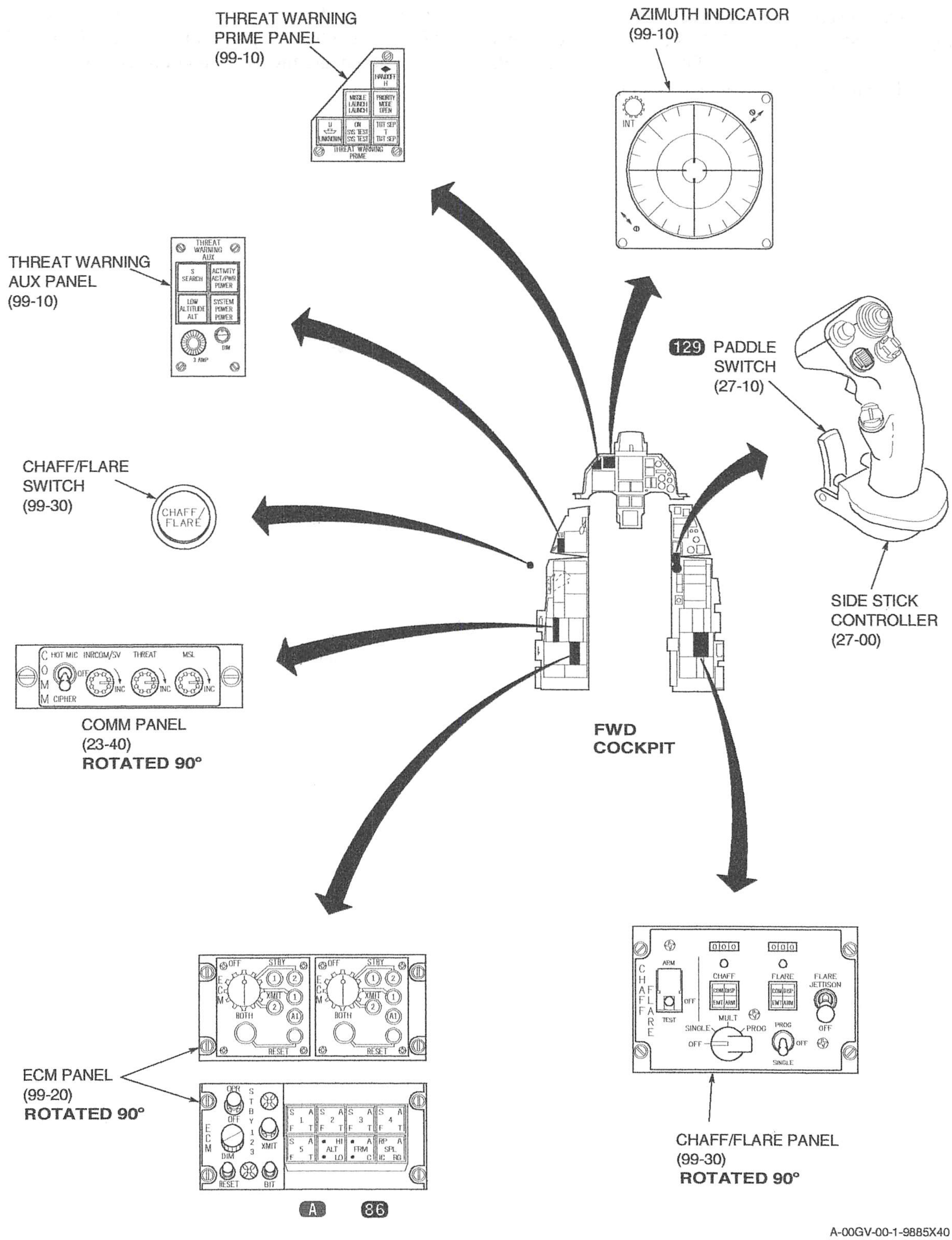


Figure 00-84. Penetration Aids and Electronic Countermeasures Cockpit Controls and Indicators. (Sheet 1 of 2)

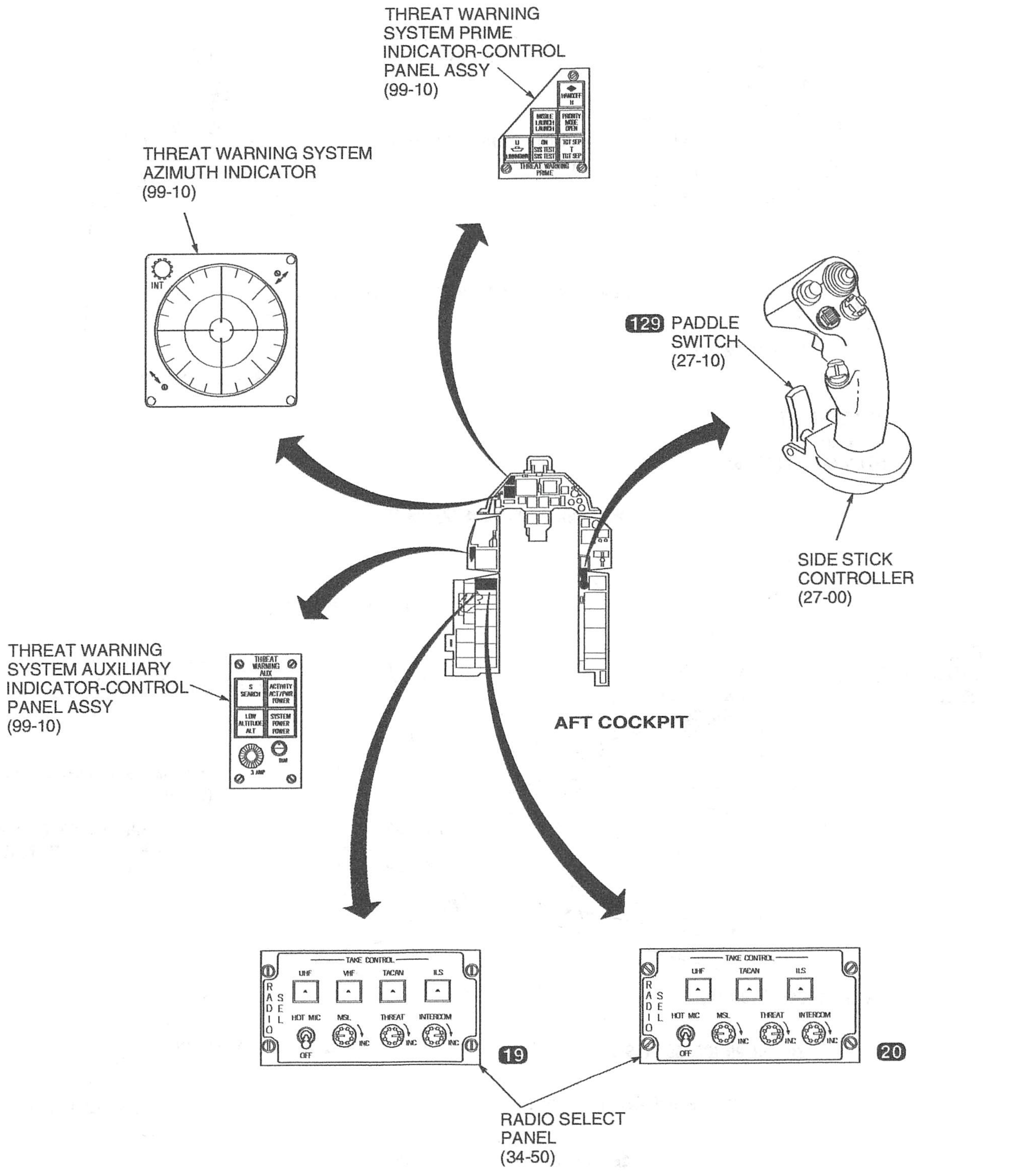


Figure 00-84. Penetration Aids and Electronic Countermeasures Cockpit Controls and Indicators. (Sheet 2)

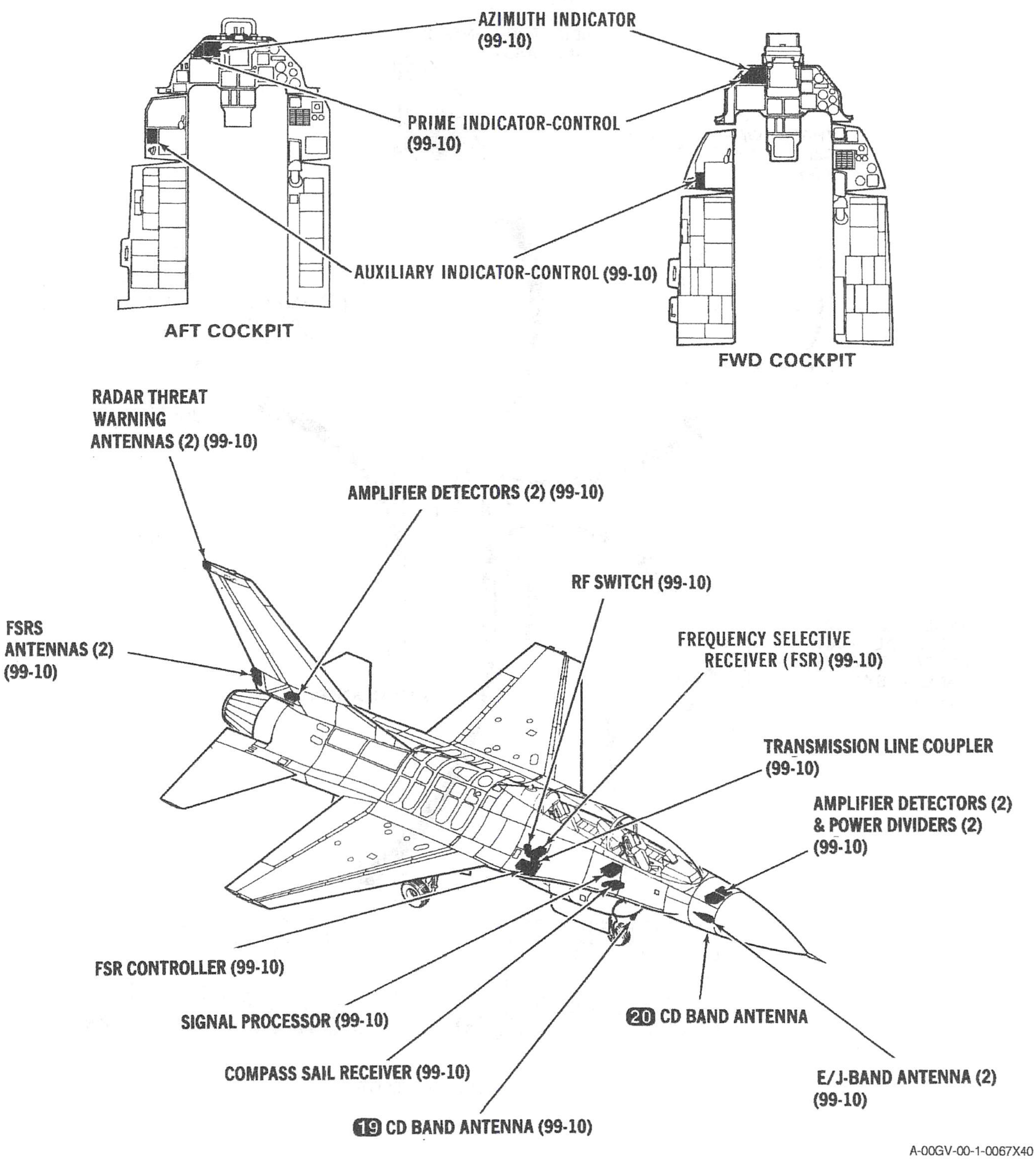


Figure 00-85. Threat Warning System Major Components Location.

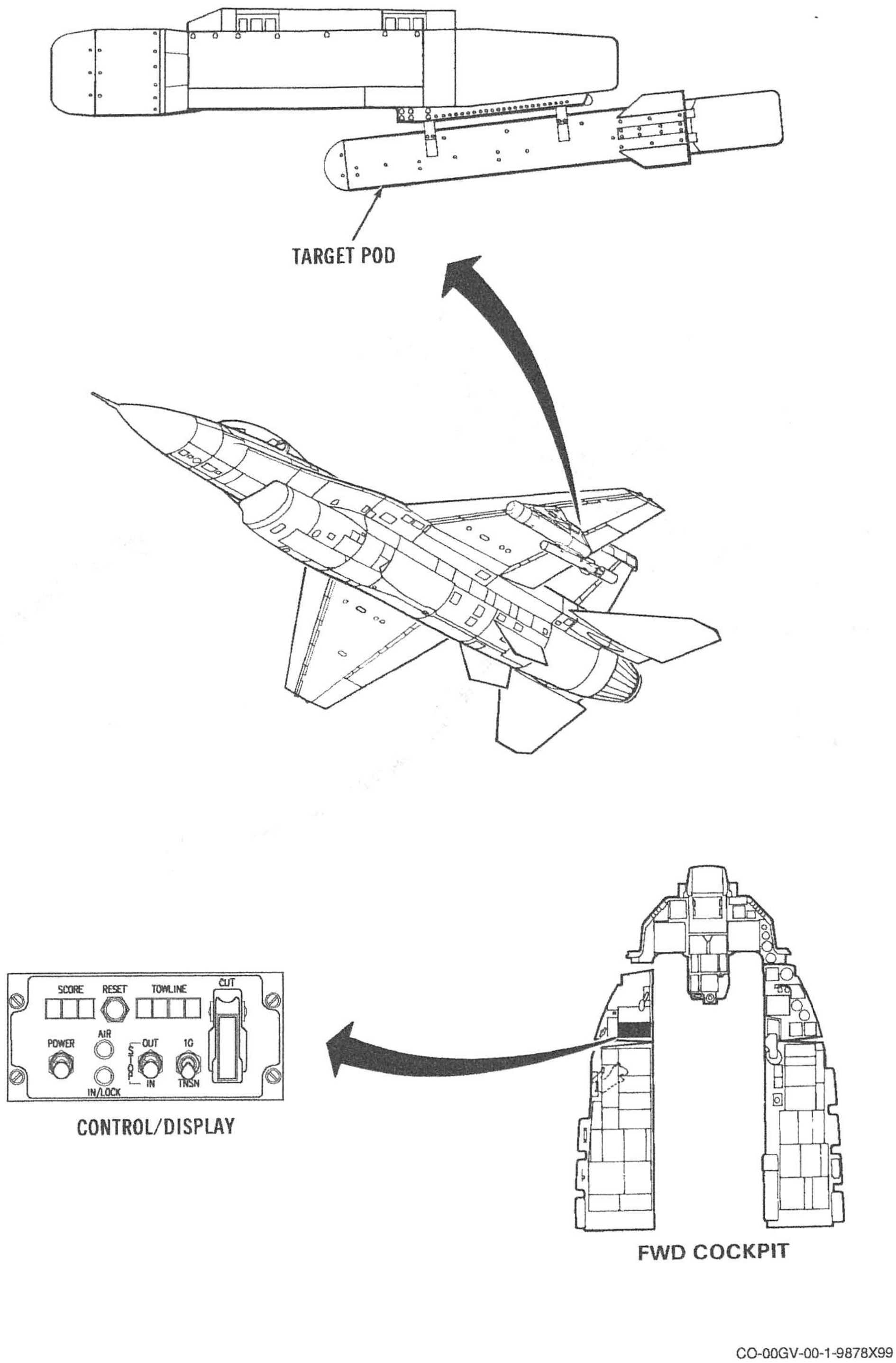


Figure 00-86. Aerial Gunnery Target Set.

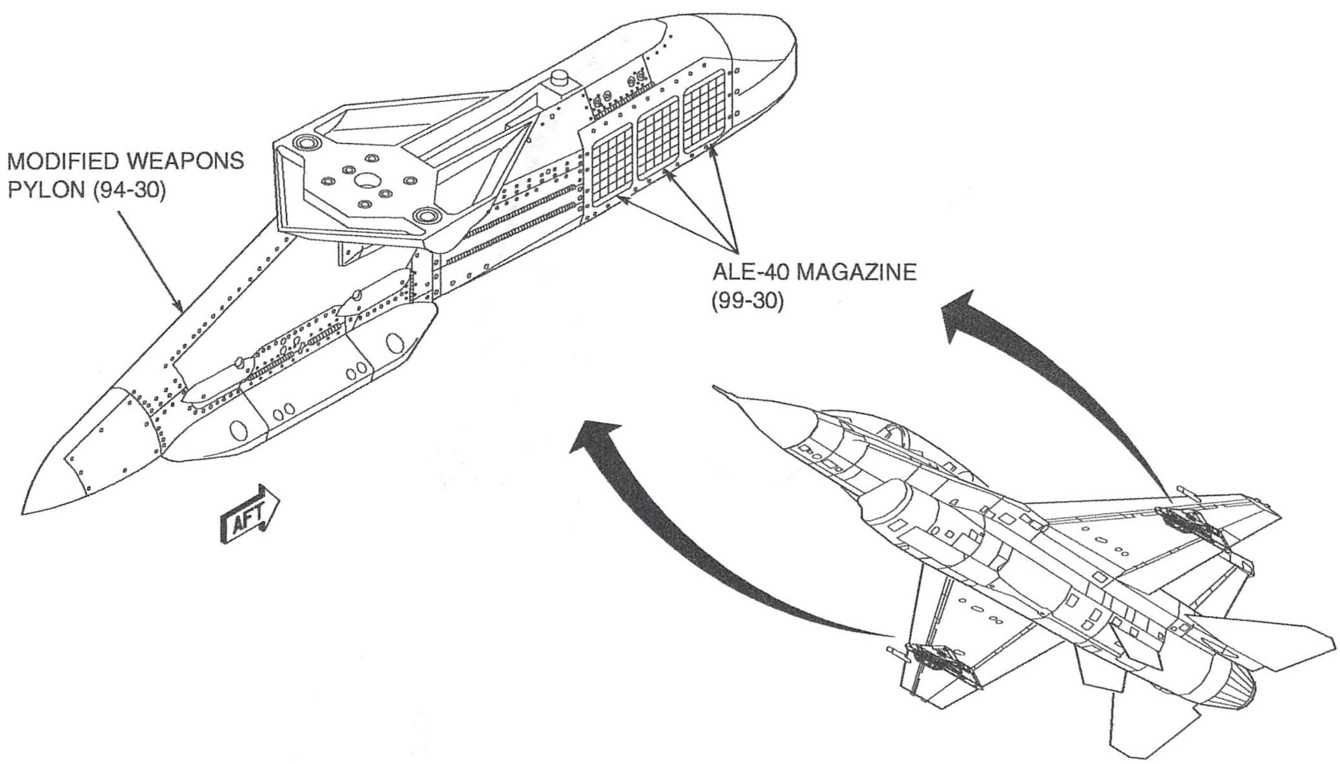


Figure 00-87. Wheel Well ECM Switch Assembly 146.

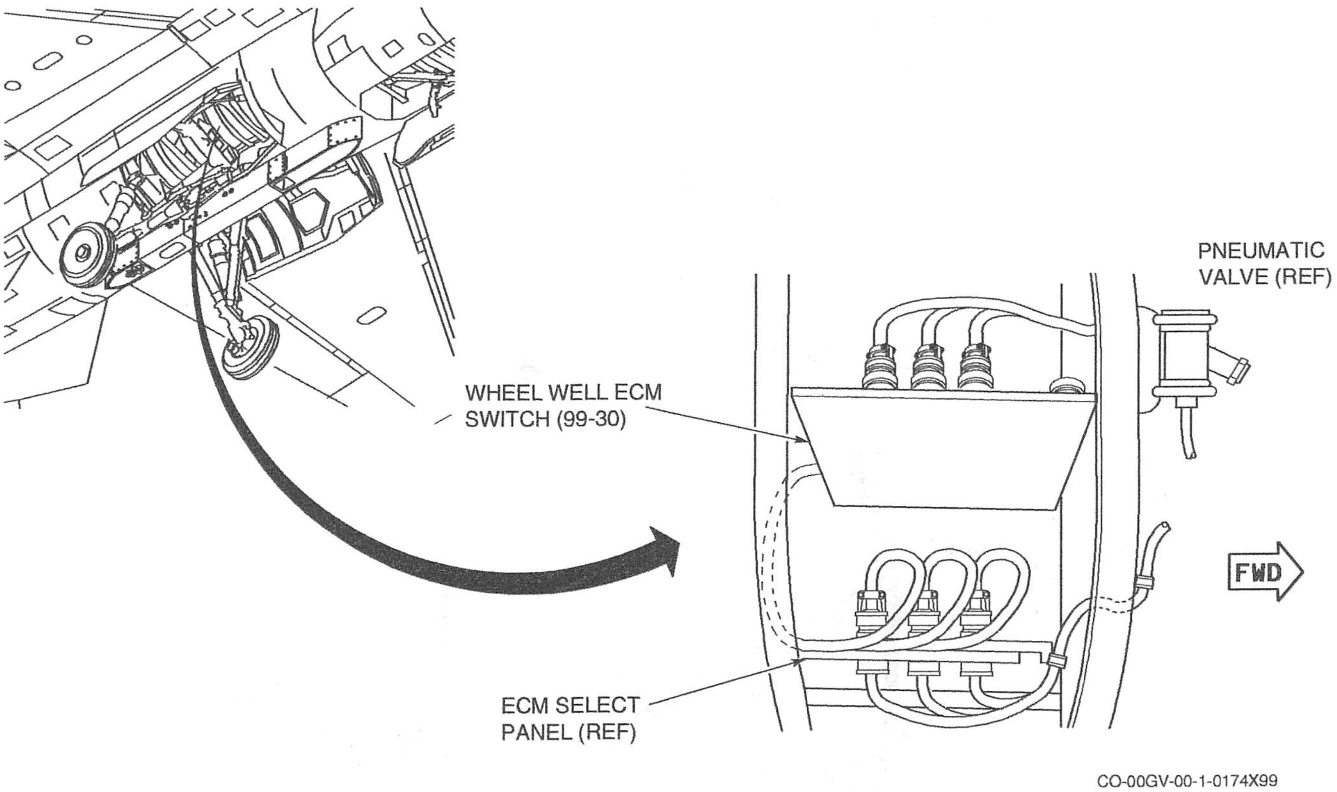


Figure 00-88. Pylon Integrated Dispenser System (PIDS-3) 146.

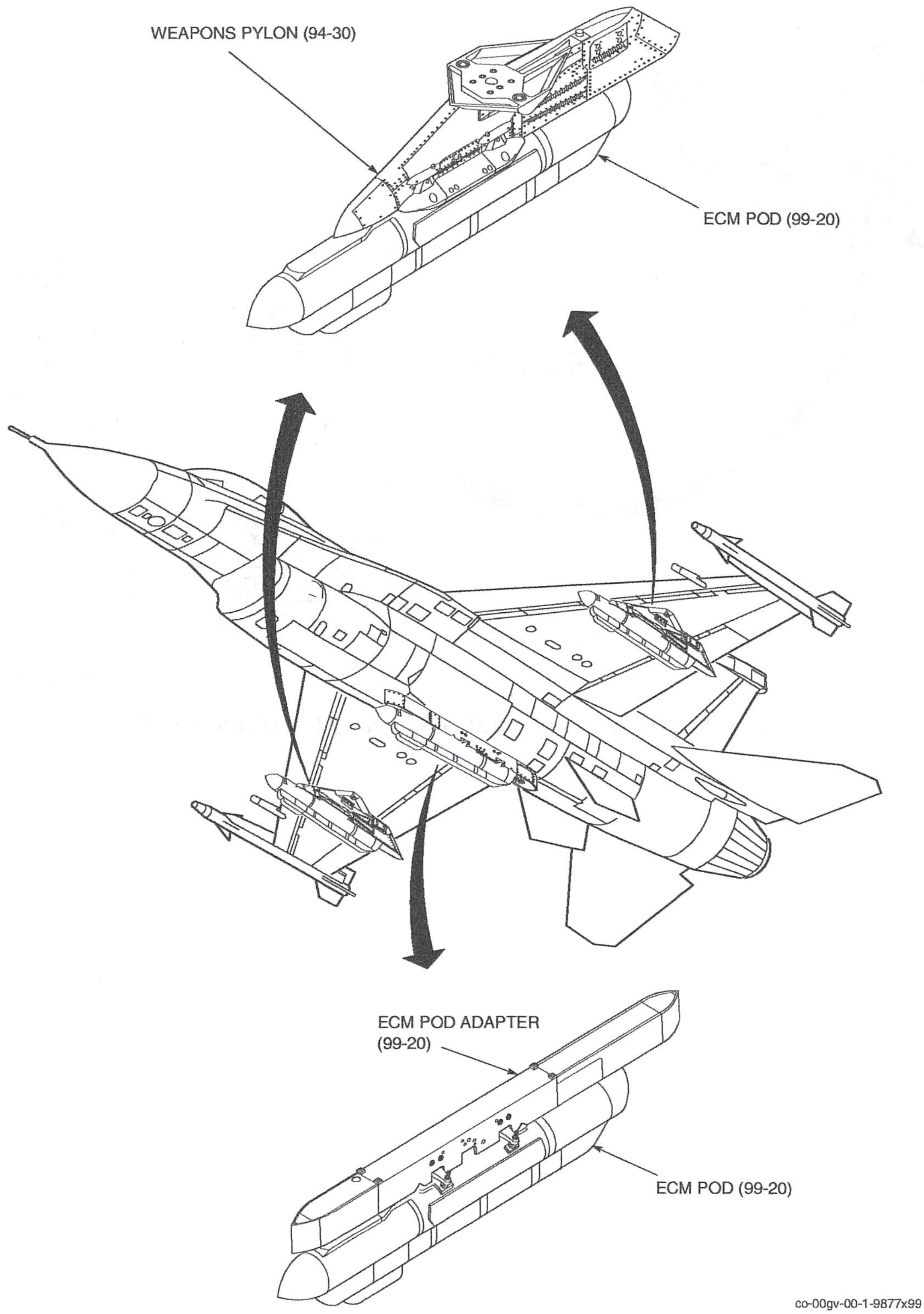


Figure 00-89. ECM Pod Locations.

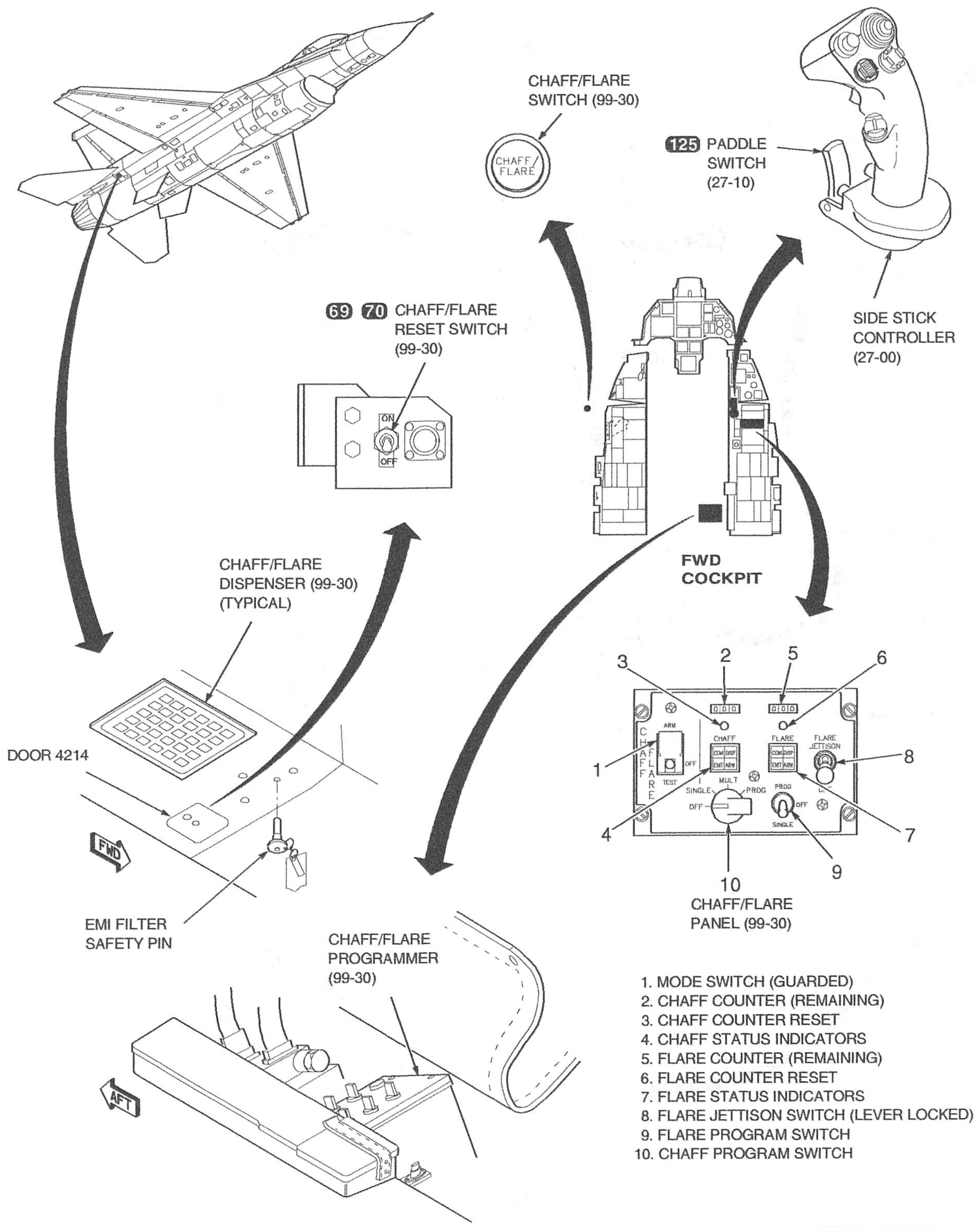


Figure 00-90. Chaff/Flare Dispenser, Programmer, Control Panel, and Side Stick Controller 7.

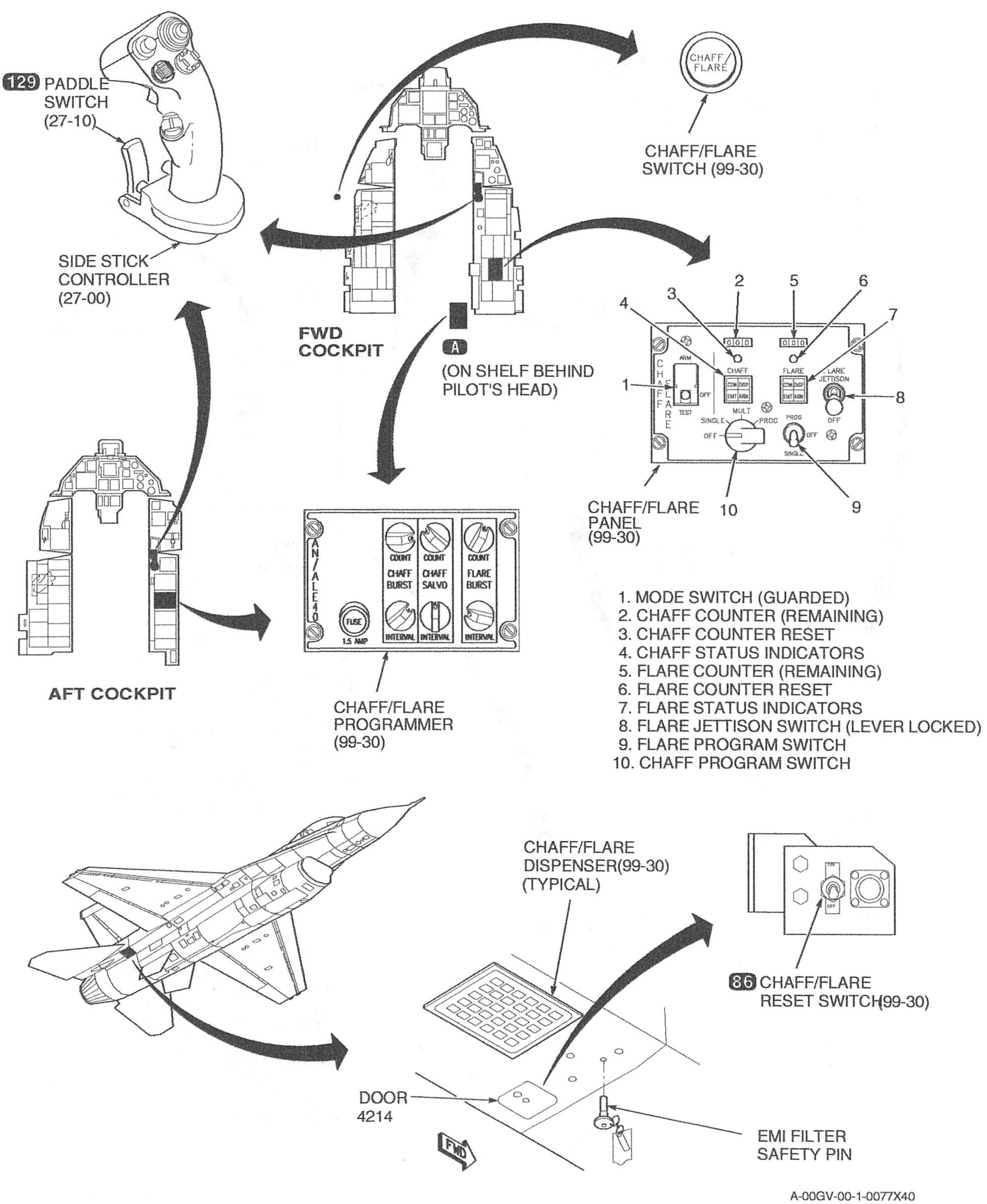


Figure 00-91. Chaff/Flare Dispenser, Programmer, Control Panel, and Side Stick Controller 8.

CHAPTER 1

LOCALLY MANUFACTURED SUPPORT EQUIPMENT

1.1 GENERAL.

This section provides information on locally manufactured support equipment for those systems which do not have general system manuals.

1.2 LONGERON REMOVAL JACKING ADAPTER KIT, PN 16A24484L1-1.

This adapter kit is used during the removal of the lower centerline longeron, which enables the removal and installation of the Auxiliary Drive Gearbox (ADG). Fabrication of the adapter kit is shown in Figure 1-1.

1.3 FABRICATION OF PORTABLE AIRCRAFT RELAY TESTER, PN 16U42576L1-1.

Portable aircraft relay tester is used to test aircraft relay assemblies, time delay relay assemblies, diode modules, and resistor modules during aircraft systems troubleshooting. Tester consists of relay/module sockets mounted on a chassis and wired to energizing switches and indicator lights. Tester is powered either by battery or 28 vdc from aircraft support equipment. It should be noted that in some adverse weather conditions tester may not operate properly on battery power. Fabrication of portable aircraft relay tester is shown in Figure 1-2. Operation of tester and list of applicable modules are in TO 1F-16( )-2-00GV-00-2.

1.4 FABRICATION OF MLG TOWING AID SPACER, PN 16A13169L1-1.

The MLG towing aid spacer allows towing of the aircraft whenever a brake assembly is removed. Fabrication of the spacer is shown in Figure 1-3.

1.5 FABRICATION OF FUEL FLOW PROPORTIONER BRACKET FIXTURE ASSEMBLY, PN 9418101.

This fixture is used for locating Fuel Flow Proportioner (FFP) brackets. Fabrication of fixture is shown in Figure 1-4.

1.6 FABRICATION OF 16A13200L1-1 MLG JACKING ADAPTER ASSEMBLY.

This jacking adapter assembly is placed on the jackscrew of the 15-ton hydraulic axle jack, PN CJ67DO250-1, to avoid overextension of jackscrew/ram when jacking aircraft main landing gear. Although nomenclature in Figure 1-5 indicates heavyweight gear, this adapter is used on lightweight gear as well. Fabrication of MLG jacking adapter assembly is shown in Figure 1-5.

1.7 FABRICATION OF SCREWJACK SUPPORT.

This support is used to prevent the aft section of the aircraft from lowering when parts are removed from the forward end, such as seats and canopy. This support is placed directly under the arresting hook of the aircraft. The height is adjusted until the machined portion of the aluminum block engages and seats into the cavity of the arresting hook mount, and then tightened until the support is seated tight against the aircraft. Fabrication is shown in Figure 1-6.

NOTE

Similar parts and materials may be used for those listed in the materials list.

1.8 FABRICATION OF 9155399 MOBILITY LADDER AND PLATFORM ASSEMBLY.

This assembly is used to enter and exit aircraft under mobility conditions. Fabrication of this assembly is shown in Figure 1-7.

1.9 FABRICATION OF LOCK STREAMER KIT, PN 9418189-10.

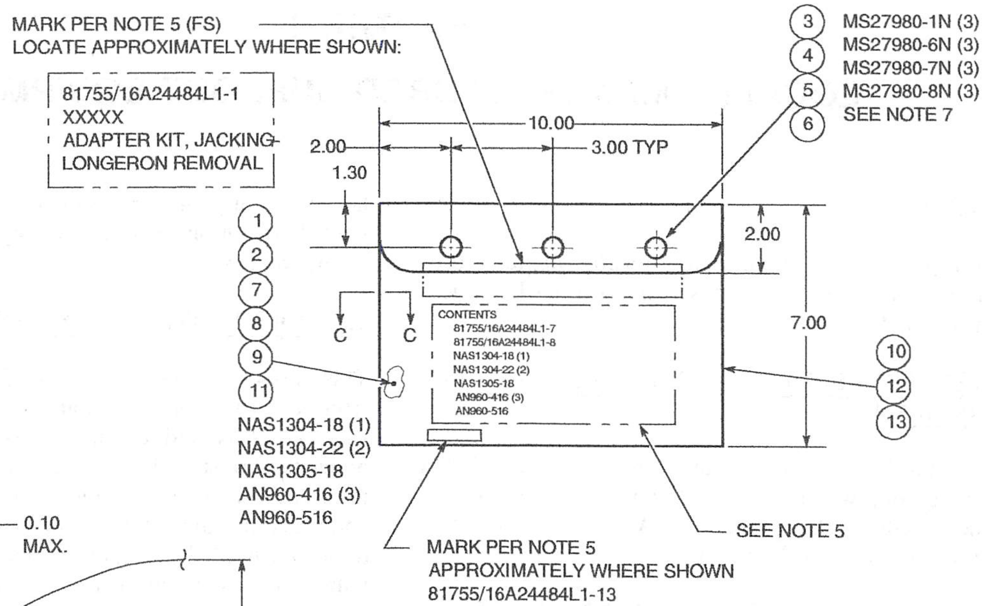
The lock streamer kit is used to disable the escape system assembly, PN J114716-507 through -521, on F-16 aircraft during static display. The lock streamer kit consists of three lock streamer assemblies, PN 9418188-10, 9418187-10, and 9418186-10. Fabrication of the lock streamer kit is shown in Figure 1-8. Installation and removal procedures for the lock streamer kit are provided in TO 00-80G-6.

1.10 FABRICATION OF WRENCH ASSEMBLY, SPLINE SOCKET, INLET STRUT, PN 16A11894L1-1.

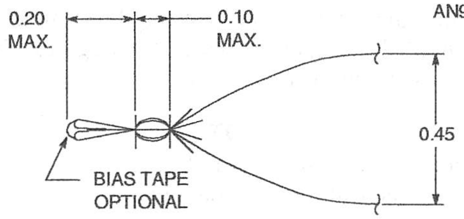
The wrench assembly is used to remove and install the inlet strut lower bolts (C7521). Fabrication of wrench assembly is shown in Figure 1-9.

1.11 FABRICATION OF TOOL, EXTRACTOR BOLT, WING ATTACH FITTING.

This tool kit is an optional tool to be used in the removal of wing attach bolts. Fabrication of extraction bolt tool assembly is shown in Figure 1-10.



-1 ADAPTER KIT

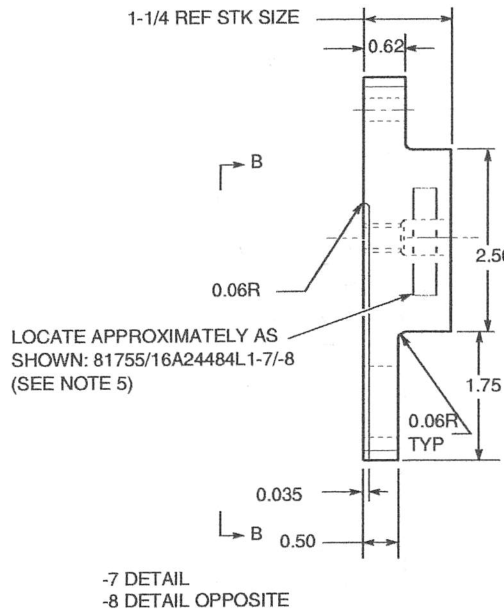


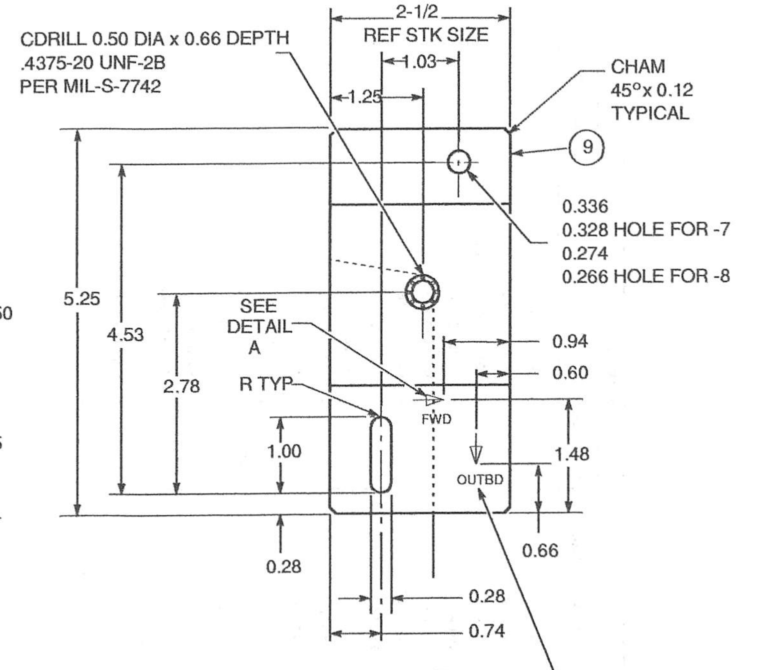
SECTION C-C

QTY REQ'D	LIST OF MATERIALS				
	LOCATOR NO.	NOMENCLATURE	MFG CODE	PART NO.	SPECIFICATION
3	1	WASHER	88044	AN960-416	FF-W-98
1	2	WASHER	88044	AN960-516	FF-W-98
3	3	FASTENER, BUTTON	96906	MS27980-1N	MIL-F-10884
3	4	FASTENER, SOCKET	96906	MS27980-6N	MIL-F-10884
3	5	FASTENER, STUD	96906	MS27980-7N	MIL-F-10884
3	6	FASTENER, EYELET	96906	MS27980-8N	MIL-F-10884
1	7	BOLT	80205	NAS1304-18	NA
1	8	BOLT	80205	NAS1305-18	NA
2	9	CARBON STEEL PLATE	NA	16A24484L1-7	ASTM-A108GR1018
	9	CARBON STEEL PLATE	NA	16A24484L1-8	ASTM-A108GR1018
1	10	BAG ASSEMBLY	NA	16A24484L1-13	SEE NOTE 7
2	11	BOLT	80205	NAS1304-22	NA
AR	12	THREAD	81348	NA	V-T-295 (TYPE I)
AR	13	CLOTH	81349	NA	MIL-C-20696 (TYPE II)

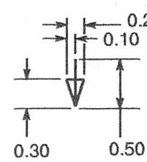
CO-00GV-00-1-0183X99

Figure 1-1. Fabrication of Adapter Kit, Jacking Longeron Removal, PN 16A24484L1-1. (Sheet 1 of 2)

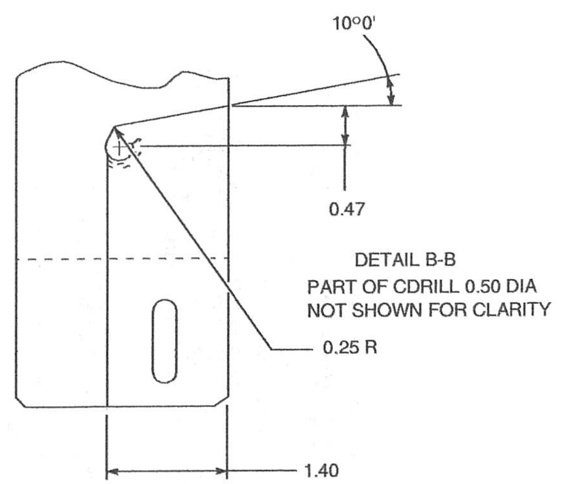




DIMENSIONS IN INCHES		
LINEAR TOL	.XX	±0.03
	.XXX	±0.010
	.X	±0.1
ANGULAR TOL		±0 30°
125 ALL MACH. SURF		



DETAIL A



DETAIL B-B
PART OF CDRILL 0.50 DIA
NOT SHOWN FOR CLARITY

1. FINISH AS FOLLOWS:
   (A) GRIT BLAST.
   (B) MIL-C-8514 COATING COMPOUND PRIMER (1 COAT)
   (C) TT-P-1757 ZINC CHROMATE PRIMER, FMS-3027 PRIMER, OR MIL-P-85582 EPOXY PRIMER (1 COAT).
   (D) MIL-C-83286 URETHANE, MIL-C-22750 EPOXY, OR TT-E-489 ENAMEL (2 COATS) COLOR 11136 RED.
2. ALL EDGES 45° x 0.015 OR 0.015 R.
3. ENDS OF ALL STITCHING TO BE BACKSTITCHED NOT LESS THAN 1/2 INCH.
4. SEAMS AND STITCHING TO HAVE NOT LESS THAN 8 NOR MORE THAN 10 STITCHES PER INCH TO FORM STITCH TYPE 301, PER FED-STD-751.
5. MARK THE INFORMATION AS SHOWN. TYPE OF MARKING, SIZE AND METHOD OF APPLICATION OPTIONAL. COLOR TO BE HIGH CONTRAST, LEGIBLE AND PERMANENT
   XXXXX DENOTES MANUFACTURERS FSCM NUMBER.
6. THE MATERIAL WILL MEET FLEXIBILITY REQUIREMENT OF MIL-C-20696, TYPE II, CLASS OPTIONAL, COLOR GREEN.
7. HOOK AND PILE FASTENER OPTIONAL
   HOOK SECTION - SIMILAR TO VELCRO NO. 65.
   PILE SECTION - SIMILAR TO VELCRO NO. 1000.

CO-00GV-00-1-0184X99

Figure 1-1. Fabrication of Adapter Kit, Jacking Longeron Removal, PN 16A24484L1-1. (Sheet 2)

NOTES (EXCEPT AS NOTED)

1 TYPE OF MARKING, SIZE, COLOR, AND METHOD OF APPLICATION OPTIONAL

2 RUBBER STAMP REF DES CHARACTERS ARE 0 12" HIGH, BLACK COLOR NO 27038 PER FED-STD-595 LOCATE APPROX AS SHOWN

3 BREAK EDGES 0 015R OR CHAM 45 X 0 015"

4 XXXXX DENOTES MANUFACTURING AGENCY'S FSCM

5 INFORMATION SPECIFIED IS TO BE METAL STAMPED WITH 0 06 HIGH CHARACTERS FILL WITH BLACK LACQUER STICK, COLOR NO 17038, PER FED-STD-595 / (SLASH) MAY BE USED IN LIEU OF (OR) BRACKETS, COLUMNS OF INFORMATION TO BE ALIGNED LEFT UPON COMPLETION OF STAMPING OPERATIONS AND APPLICATION OF LACQUER STICK, THE PLATE SHALL BE GIVEN A COAT (NEAR AND FAR SIDES) OF LACQUER CONFORMING TO MIL-L-15937

6 FINISH AS NOTED
(A) MIL-C-5541 CHEMICAL FILM
(B) MIL-P-85582 PRIMER (1) ONE COAT
(C) MIL-C-83286 POLYURETHANE, GRAY COLOR NO 16473 PER FED-STD-595 (2) TWO COATS

7 ENGRAVE 0 18" HIGH CHARACTERS, FILL WITH BLUE EPOXY ENAMEL, COLOR NO 15080 PER FED-STD-595 LOCATE APPROX AS SHOWN

8 SOLDER PER REQUIREMENT 5 OF MIL-STD 454

9 INFORMATION TO BE STAMPED IN 5/64" HIGH CHARACTERS, BLACK COLOR NO 37038 PER FED-STD-595 WITH A KINGSLEY STAMPING MACHINE OR EQUIV

10 PAINT LINE WITH BLUE EPOXY ENAMEL COLOR NO 15080 PER FED-STD-595 LOCATE APPROX AS SHOWN

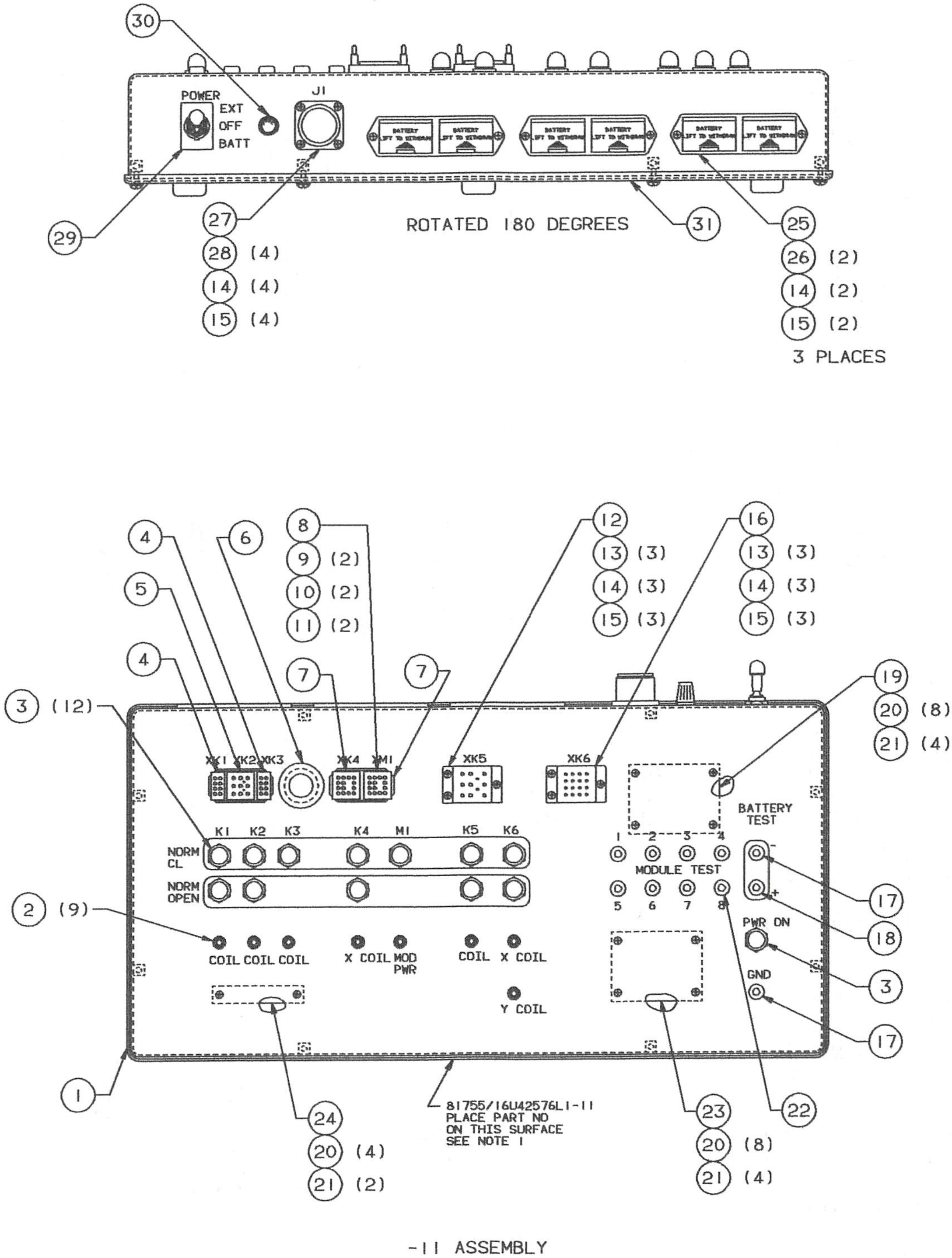
11 LAST GND WIRE NO USED = 100X
LAST SIGNAL WIRE NO USED = 168B

12 MOUNTING HARDWARE IS SUPPLIED AS PART OF 98376/ZT160-320-48-HH BOX

QTY REQ'D	LIST OF MATERIALS				
	LOCATOR NO	NOMENCLATURE	MFG CODE	PART NO	SPECIFICATION
1	1	CHASSIS	81755	16U42576L1-11	
9	2	SWITCH		M8805/96-005	
13	3	LIGHT	72619	101-8430-0932-203	
2	4	RELAY		M6106/23-001	
1	5	RELAY		M6106/23-003	
1	6	GROMMET		MS35489-48	
2	7	RELAY		M6106/23-002	
1	8	RELAY		M6106/25-003	
4	9	SCREW		MS24693-50	
4	10	WASHER		MS35338-42	
4	11	NUT		MS35649-282	
1	12	SOCKET	35344	S0-1057-8912	
6	13	SCREW		MS51957-18	
16	14	WASHER		MS35338-40	
16	15	NUT		MS35649-242	
1	16	SOCKET	35344	S0-1056-8691	
2	17	BANANA JACK	74970	108-0903-001	
1	18	BANANA JACK	74970	108-0902-001	
1	19	TERMINAL BD ASSY		16U42576L1-19	
24	20	SCREW		MS51957-13	
10	21	SPACER		312-6473-016	
8	22	JACK	74970	108-0901-001	
1	23	TERMINAL BD ASSY		16U42576L1-17	
1	24	TERMINAL BOARD		16U42576L1-21	
3	25	BATTERY HOLDER	60046	B26	
6	26	SCREW		MS24693-5	
1	27	RECEPTICAL		MS3450W18-9S	
4	28	SCREW		MS51957-16	
1	29	SWITCH		MS24658-21A	
1	30	FUSE HOLDER		FHN42W	MIL-F-19207/26
1	31	COVER	81755	16U42576L1-23	

CO-00GV-00-1-0186X99

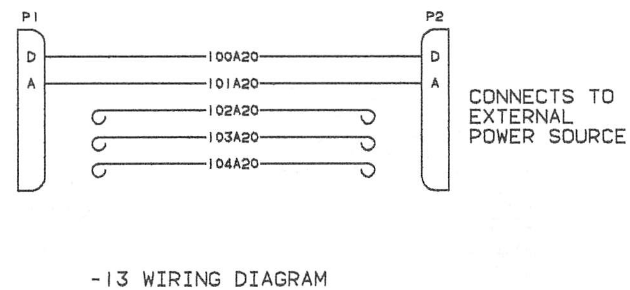
Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 1 of 9)



CO-00GV-00-1-0187X99

Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 2)

	LIST OF MATERIALS				
QTY REQ'D	LOCATOR NO	NOMENCLATURE	MFG CODE	PART NO	SPECIFICATION
2	1	PLUG		MS3459W18-9P	
3	2	STRAP		MS3368-5-9E	
AR	3	INSUL SLEEVING		M23053/5-160-0	
2	4	TERMINAL BOARD	71279	200-1402-31-01-02	
AR	5	BUSS WIRE	92194	297	QQ-W-343 TYPE S
1	6	TERMINAL BOARD	71279	200-1401-31-01-02	



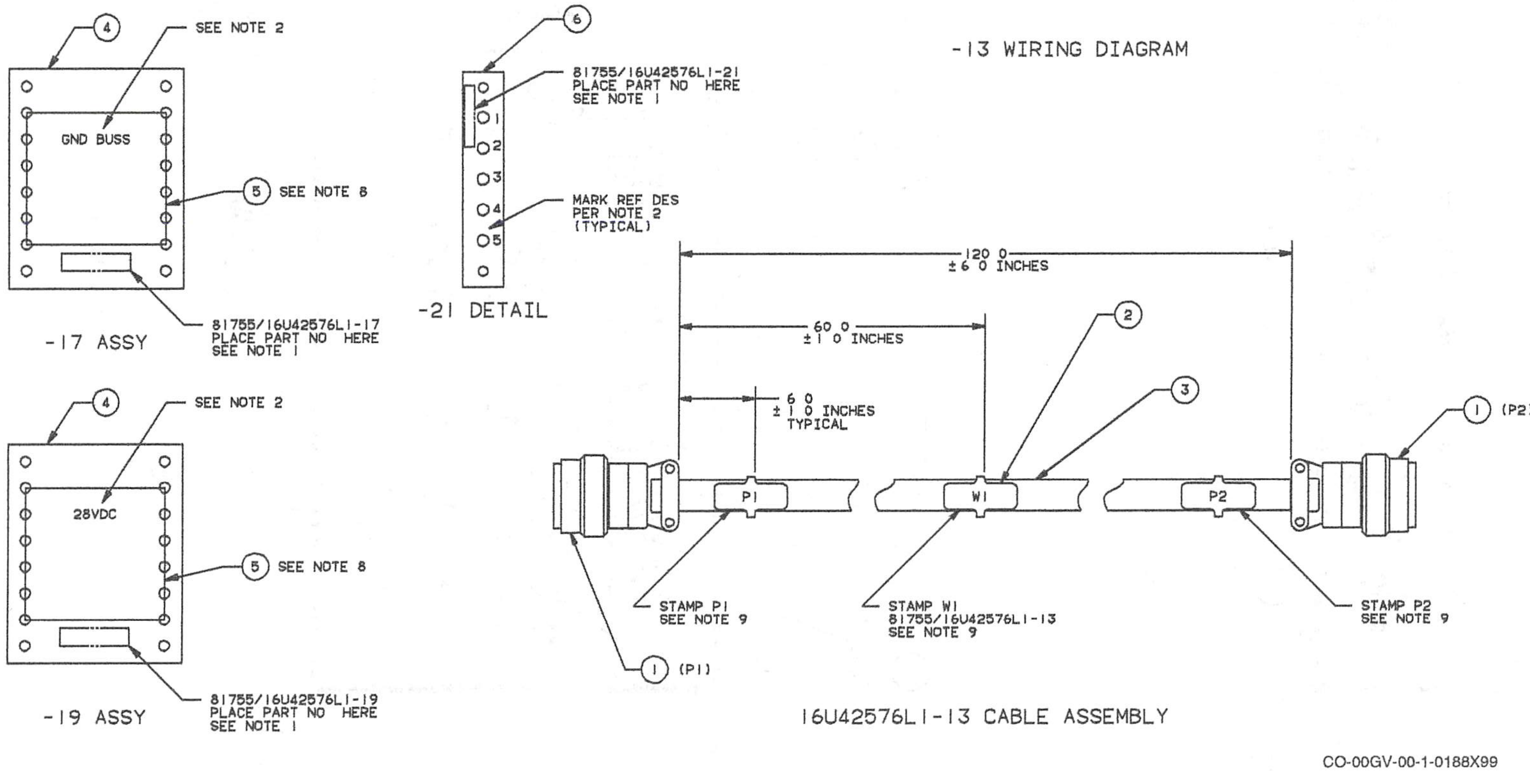


Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 3)

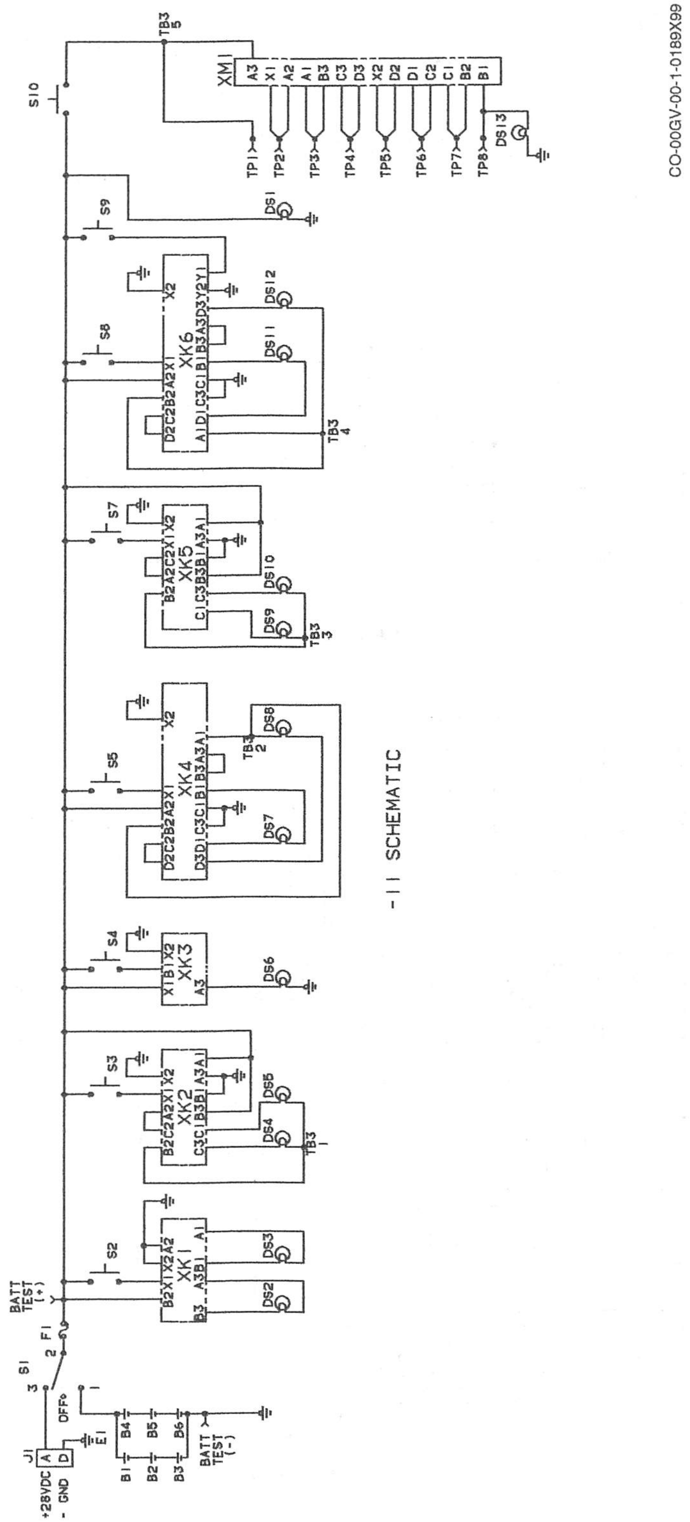
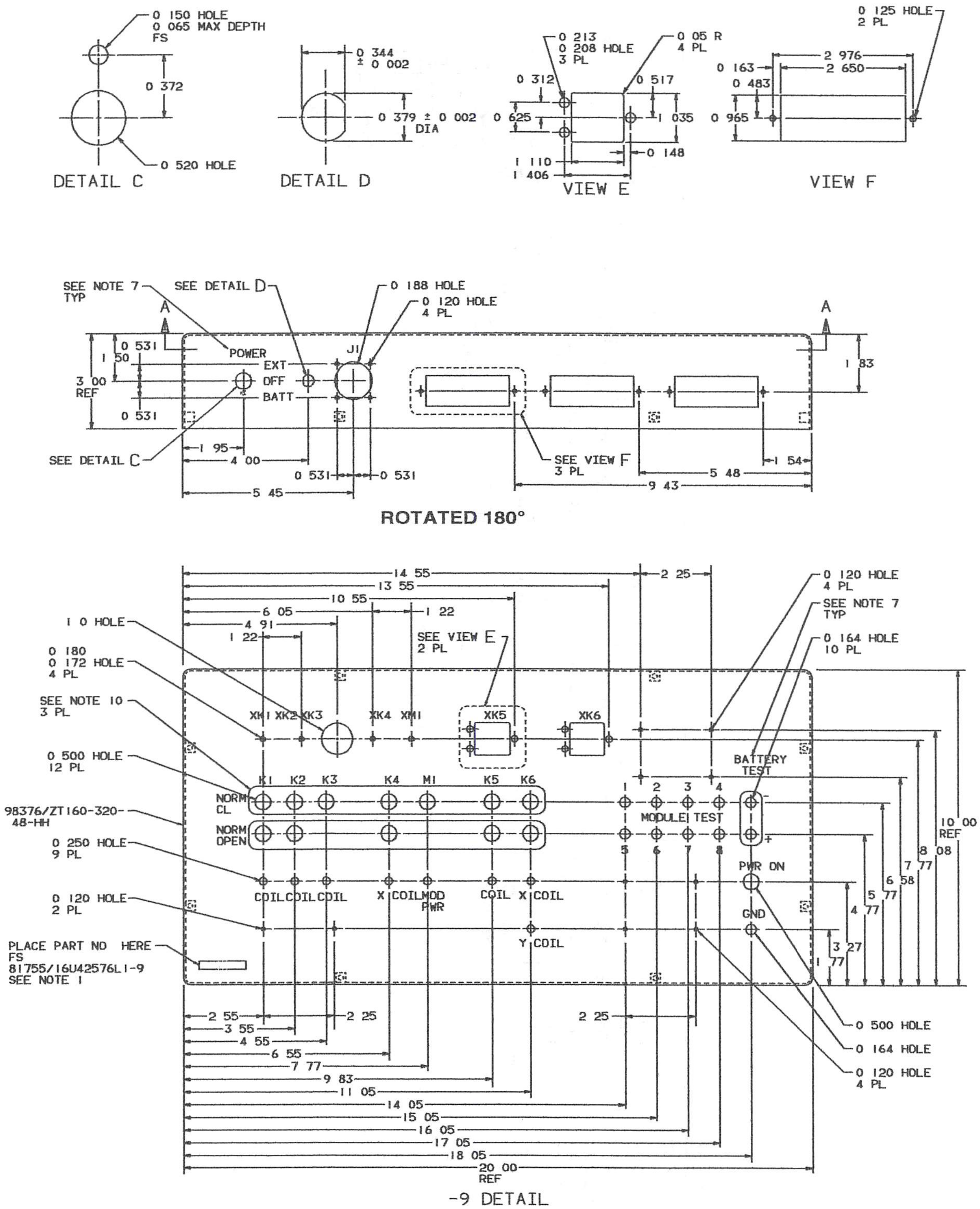


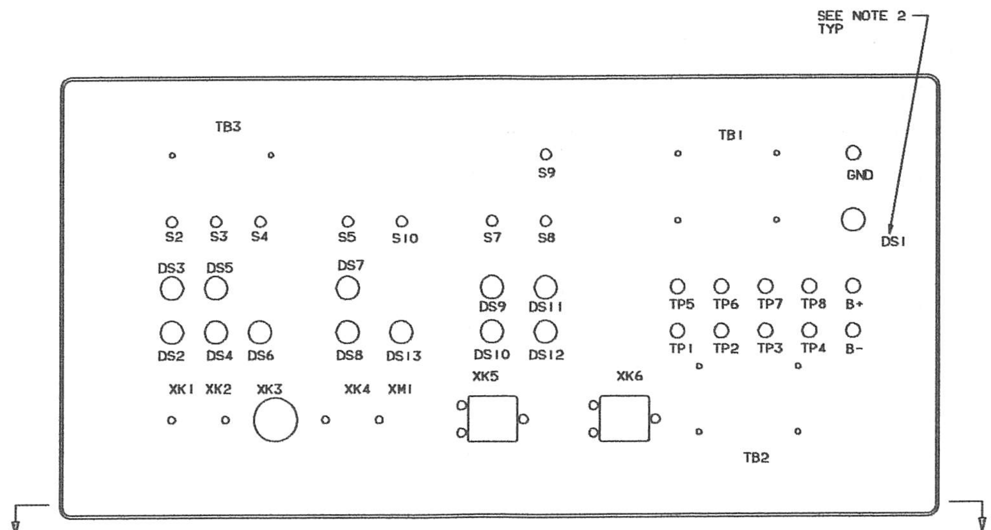
Figure 1-2.   Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 4)



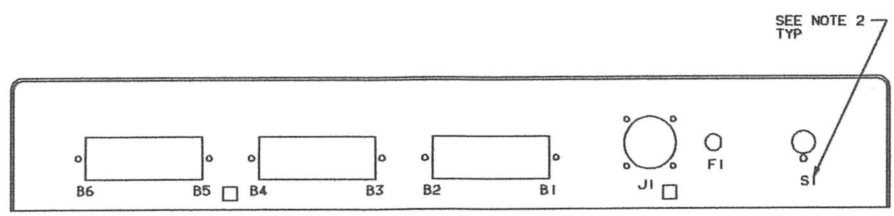
CO-00GV-00-1-0190X99

Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 5)

QTY REQ'D	LIST OF MATERIALS				
	LOCATOR NO	NOMENCLATURE	MFG CODE	PART NO	SPECIFICATION
1		BOX	98376	ZT160-320-48-HH	
1		COVER	98376	ZT160-320COG-HH	



SECTION A-A



SECTION B-B

CO-00GV-00-1-0191X99

Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 6)

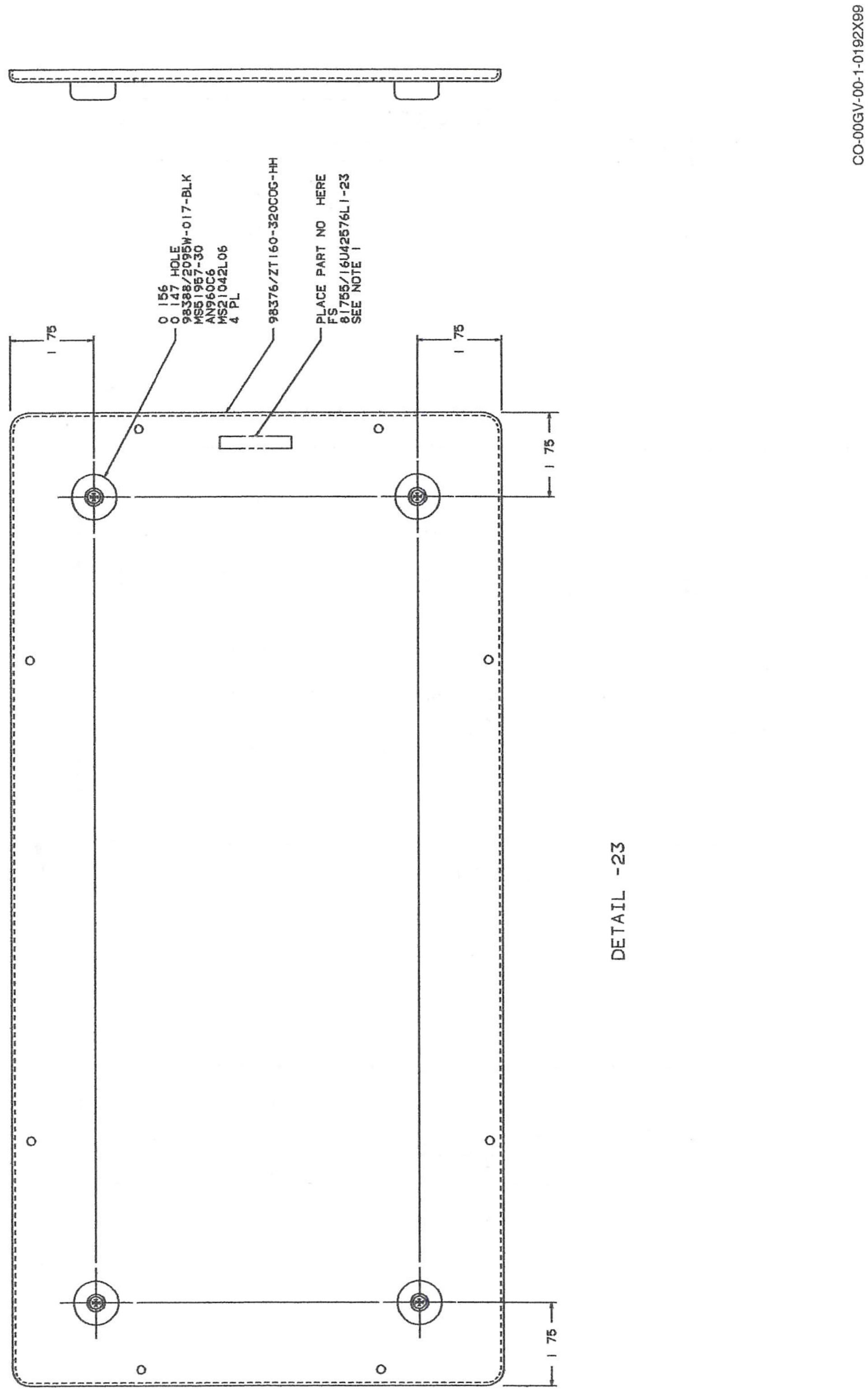


Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 7)

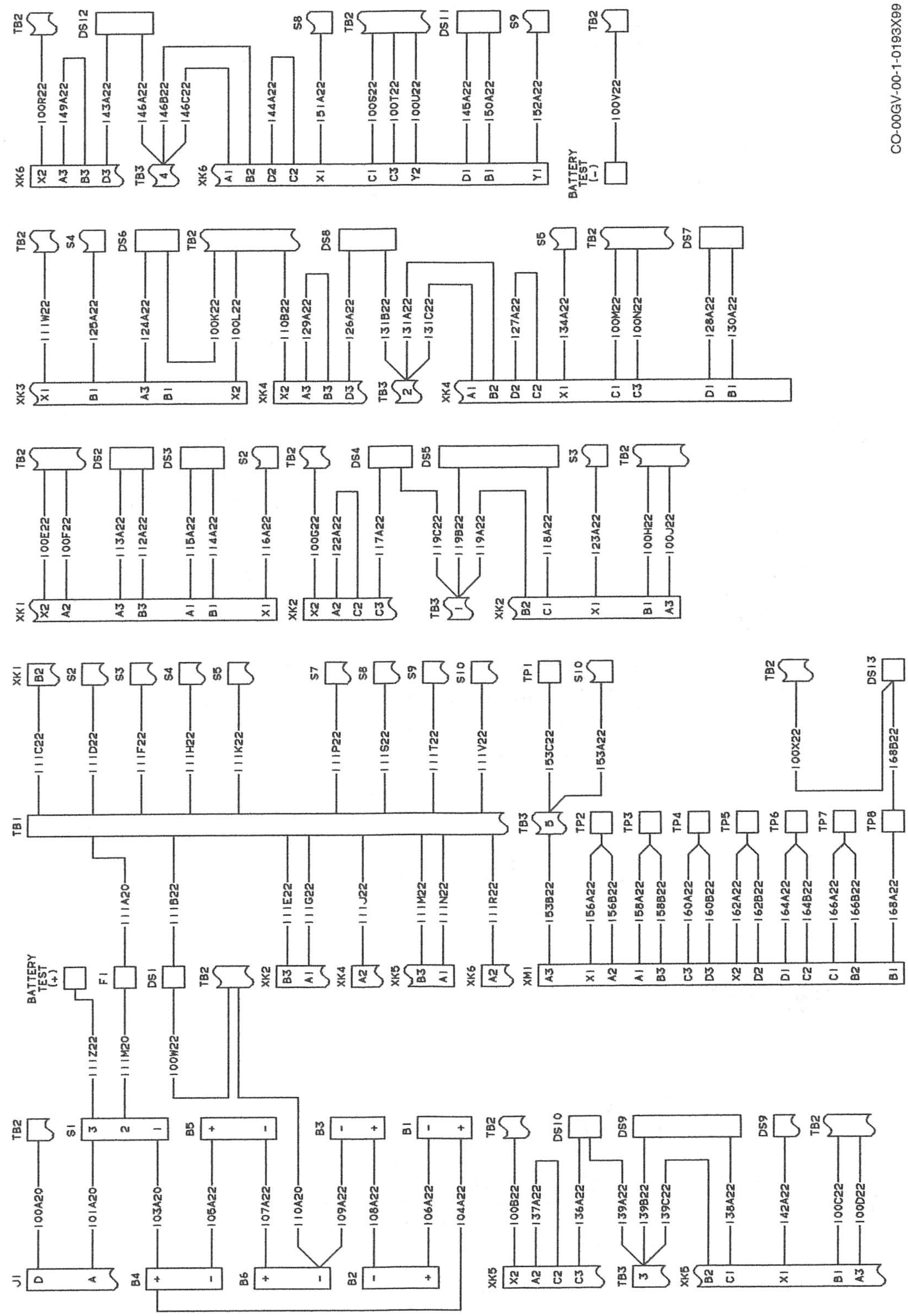
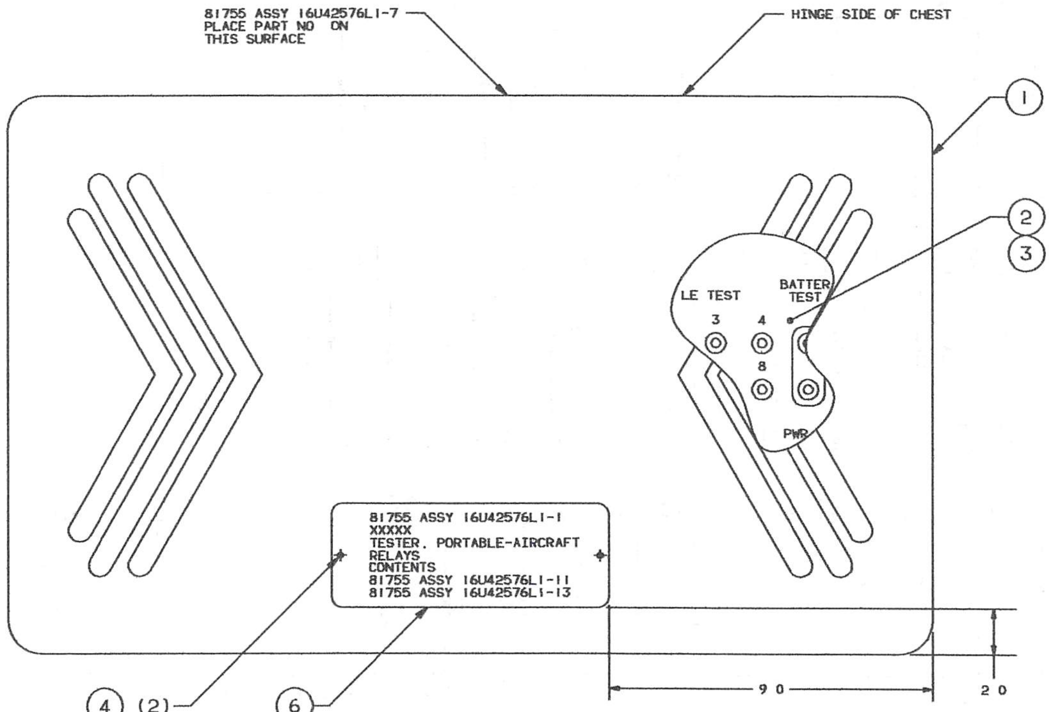
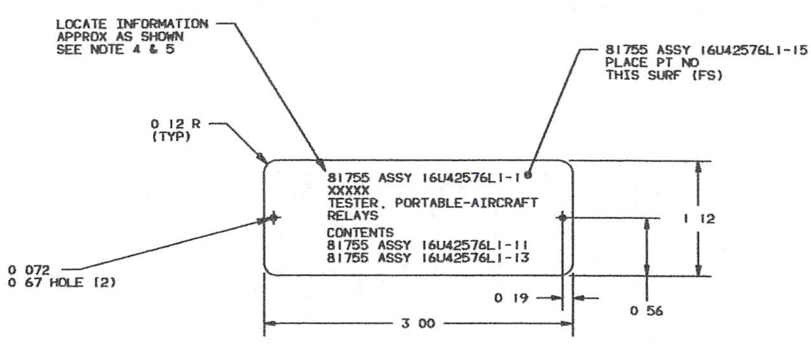


Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 8)

	LIST OF MATERIALS				
QTY REQ'D	LOCATOR NO	NOMENCLATURE	MFG CODE	PART NO	SPECIFICATION
1	1	CHEST ASSY	59216	2414	
1	2	CHASSIS ASSY		16U42576L1-11	
1	3	CABLE ASSY		16U42576L1-13	
AR	4	RIVET		MS20470AD2	
2	5	WASHER		MS15795-701	QQ-A-250/8-0
1	6	PLATE 0 040"X2"X3"		16U42576L1-15	



-1 ASSY
VIEW LOOKING DOWN ON TOP



-15 DETAIL

CO-00GV-00-1-0194X99

Figure 1-2. Fabrication of Portable Aircraft Relay Tester, PN 16U42576L1-1. (Sheet 9)

Table 1-1. Fabrication of MLG Towing Aid Spacer, PN 16A13169L1-1.

<table>
<tr><th>QTY REQ</th><th>LOCATOR NO.</th><th>NOMENCLATURE</th><th>MFG CODE</th><th>PART NO.</th><th>SPECIFICATION</th></tr>
<tr><td>1</td><td>1</td><td>HUB 3.5" DIA X 3.3"</td><td></td><td>16A13169L1-9</td><td>QQ-A-200/8-T651</td></tr>
<tr><td>1</td><td>2</td><td>BRACE 1" X 2" X 3"</td><td></td><td>16A13169L1-13</td><td>QQ-A-250/11-T651</td></tr>
<tr><td>1</td><td>3</td><td>JOINER 0.188" X 2" X4"</td><td></td><td>16A13169L1-11</td><td>QQ-A-250/11-T6</td></tr>
<tr><td>1</td><td>4</td><td>STREAMER</td><td>80205</td><td>NAS1756-24</td><td></td></tr>
<tr><td>1</td><td>5</td><td>SCREW</td><td>96906</td><td>MS27039-1-10</td><td></td></tr>
<tr><td>1</td><td>6</td><td>WASHER</td><td>88044</td><td>AN960-10L</td><td></td></tr>
<tr><td>1</td><td>7</td><td>NUT</td><td>96906</td><td>MS21042L3</td><td></td></tr>
<tr><td colspan="6">TOLERANCES (UNLESS OTHERWISE SPECIFIED, DIMENSIONS IN INCHES)</td></tr>
<tr><td colspan="3">LINEAR TOL</td><td colspan="3">ANGULAR TOL</td></tr>
<tr><td colspan="2">.XX
.XXX
.X</td><td>0.03
0.01
0.1</td><td colspan="3">±0° 30’</td></tr>
<tr><td colspan="6">SURFACE ROUGHNESS 125 ON ALL MACH SURF.</td></tr>
<tr><td colspan="6">NOTES (CORRESPOND TO TRIANGLE IN FIGURE):
1. Break all edges 0.015R or CHAM 45° x 0.015.
2. As welded condition permissible in weld areas.
3. Weld hub, joiner, and spacer as shown per TO 1-1A-9.
4. Finish inside surface of hub with chemical conversion coating, conforming to class 1A or MIL C 81706 and applied in accordance with MIL-C-5541.
5. Finish all but inside surface of hub per MIL-STD-808, code 401, color 11136 red.
6. Attach streamer to joiner with screw, washer, and nut as shown. Tighten nut.</td></tr>
</table>

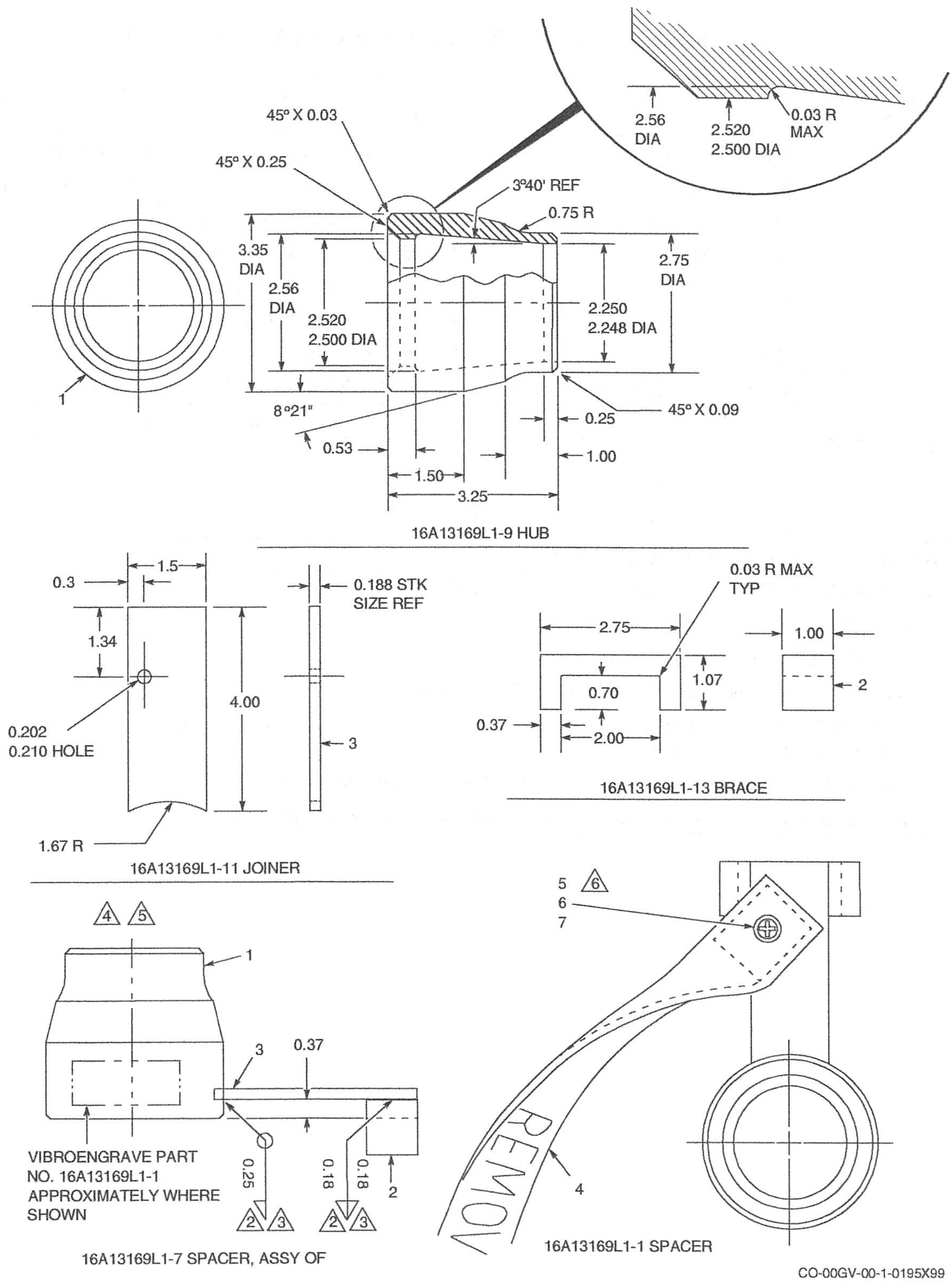


Figure 1-3. Fabrication of MLG Towing Aid Spacer, PN 16A13169L1-1.

Table 1-2. Fabrication of PN 9418101 FFP Bracket Fixture Assembly.

QTY REQD		NOMENCLATURE	PART NO.	SPECIFICATION
-30	-10			
	1	SETSCREW	MS511963-109	
	1	NUT	MS35691-17	
1		SCREW	MS16997-64	
4	7	SCREW	MS16997-59	
1		DRILL GUIDE	-13	*
	2	DRILL GUIDE	-11	*
	2	DRILL GUIDE	-07	*
	2	DRILL GUIDE	-05	*
1		BASE	-03	ALUMINUM ALLOY 6061, BAR, TEMPER TS PER QQ A 225/B
	1	SUPPORT	-01	ALUMINUM ALLOY 6061, BAR, TEMPER TS PER QQ A 225/B
1		DRILL FIXTURE ASSY	-30	
	1	DRILL FIXTURE ASSY	-10	

NOTES:

1. THIS DRAWING PREPARED IN ACCORDANCE WITH MIL-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130. LOCATION AND METHOD OPTIONAL
3. REMOVE ALL BURRS AND SHARP EDGES EQUIVALENT TO R 0.015.
4. INSIDE RADII 0.010-INCH MAX EXCEPT AS NOTED.
5. SURFACE ROUGHNESS 125 UNLESS OTHERWISE SPECIFIED.
6. APPLY CORROSION PREVENTIVE COMPOUND, CLASS II, IN ACCORDANCE WITH MIL-C-16173.
7. HEATTREAT -05 THROUGH -13 DRILL GUIDES TO MINIMUM HARDNESS RC 61 IN ACCORDANCE WITH ASTM A681.
8. -10 AND -30 DRILL FIXTURE ASSEMBLIES MAY BE USED FOR THE INSTALLATION OF 8930381-03 (98747) AND 8930380-01 (98747) BRACKET, RESPECTIVELY, F-16 Aircraft.

* Cold work tool steel, type D3, bar, cold drawn, annealed, in accordance with ASTM A681.

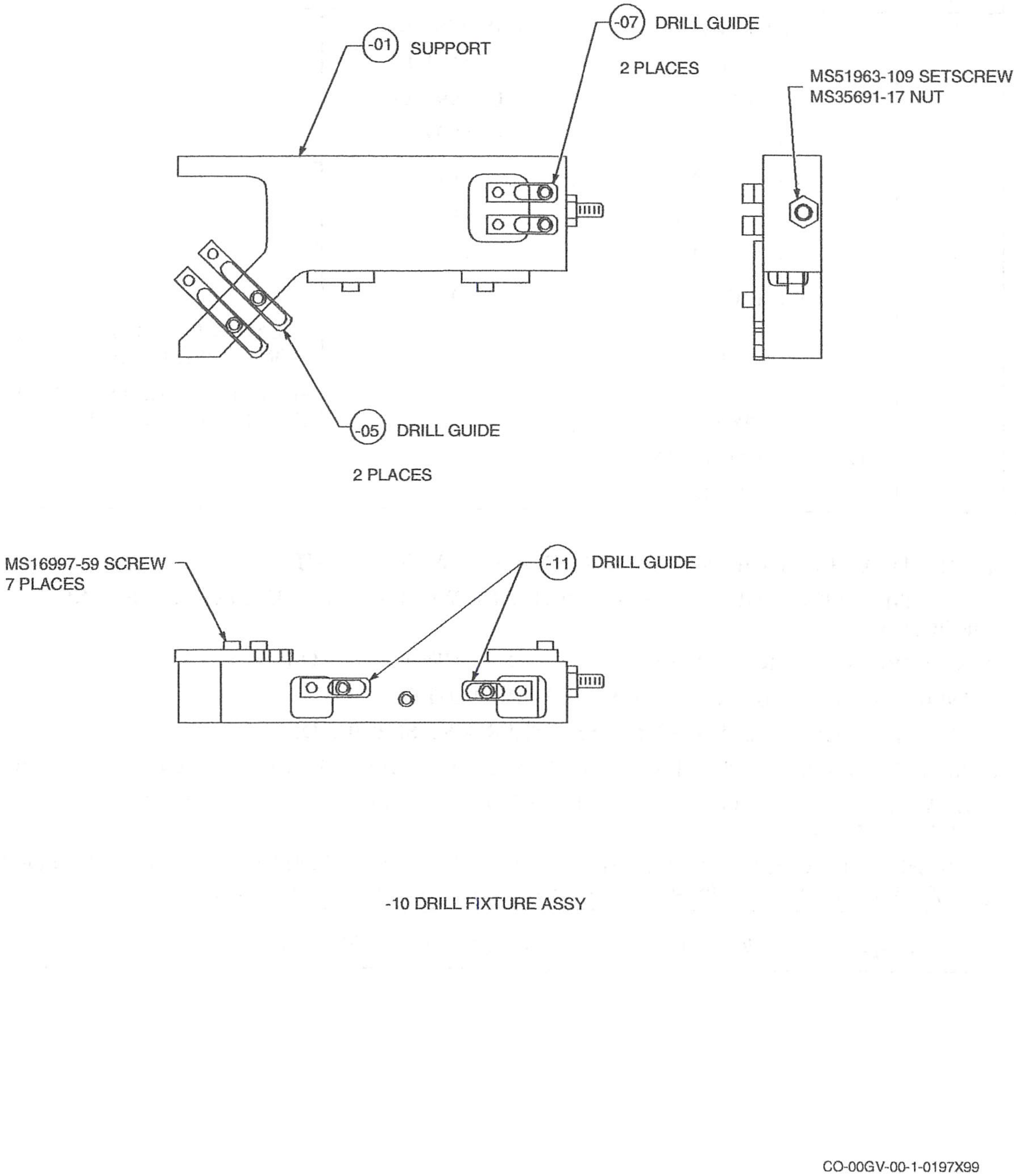
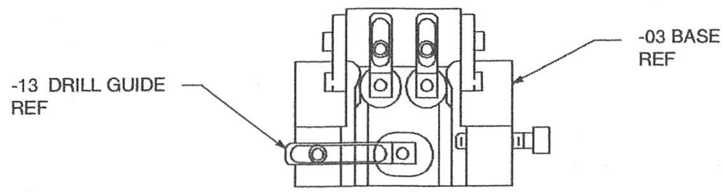
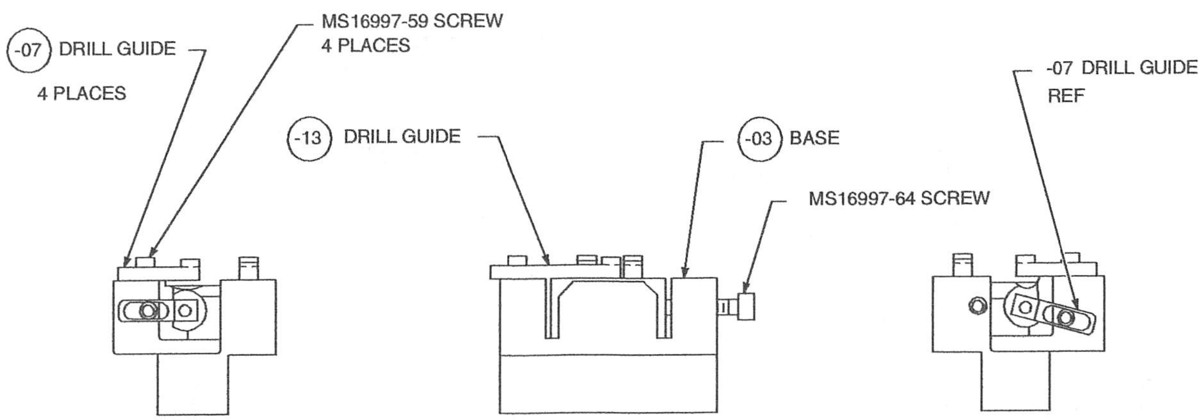


Figure 1-4. Fabrication of FFP Bracket Fixture Assembly, PN 9418101. (Sheet 1 of 5)

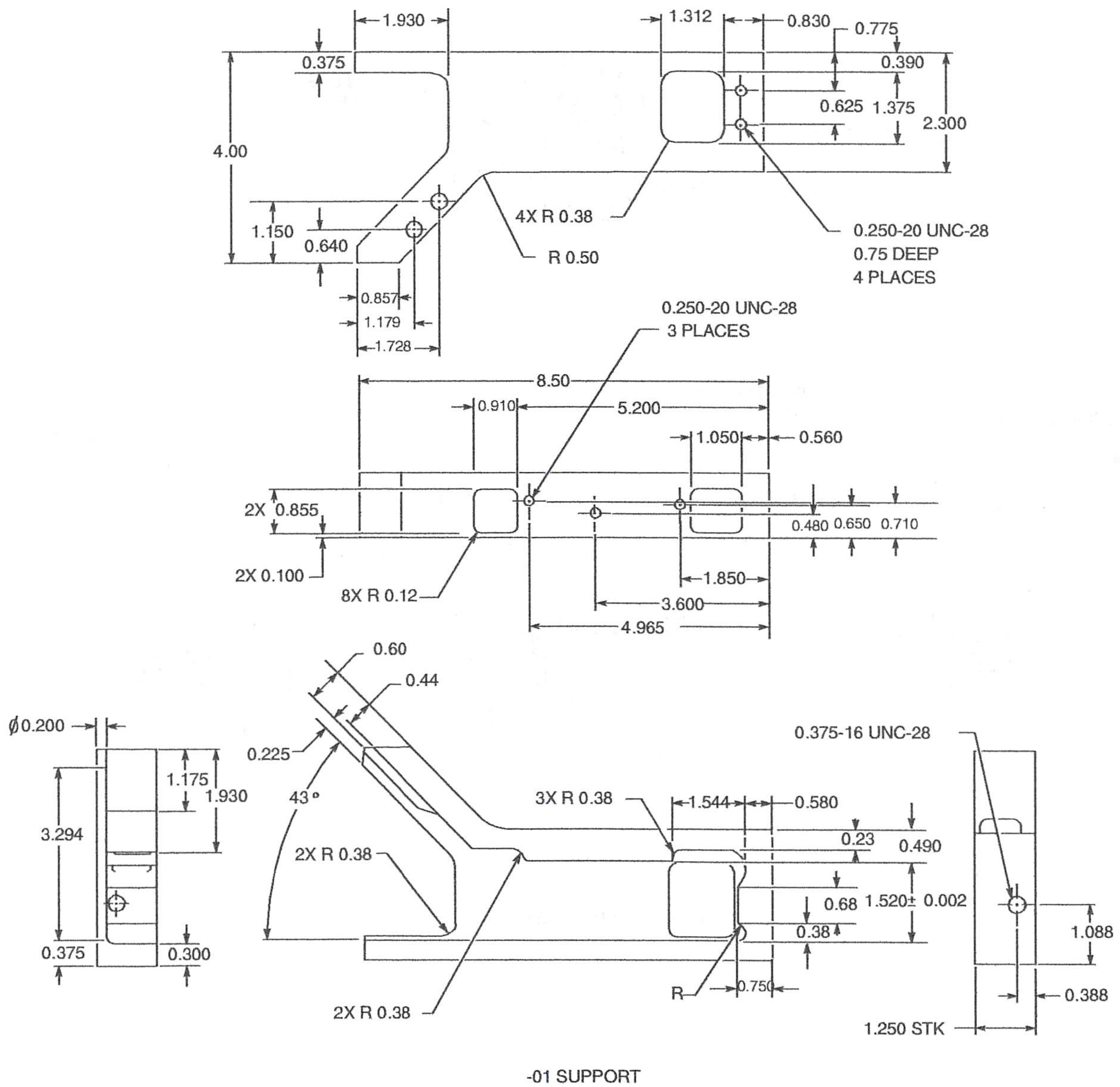




-30 DRILL FIXTURE ASSY

CO-00GV-00-1-0198X99

Figure 1-4. Fabrication of FFP Bracket Fixture Assembly, PN 9418101. (Sheet 2)



CO-00GV-00-1-0199X99

Figure 1-4. Fabrication of FFP Bracket Fixture Assembly, PN 9418101. (Sheet 3)

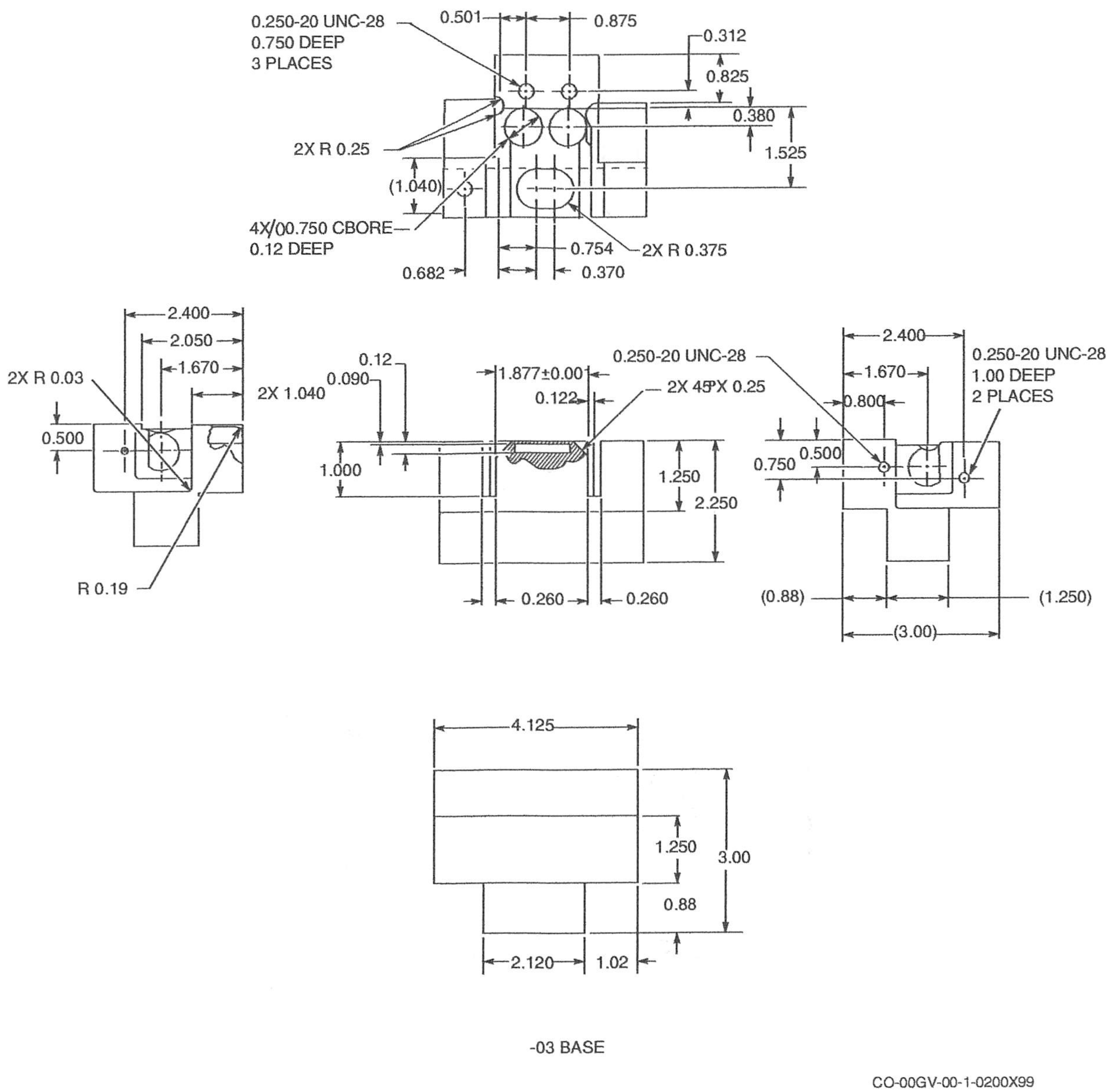
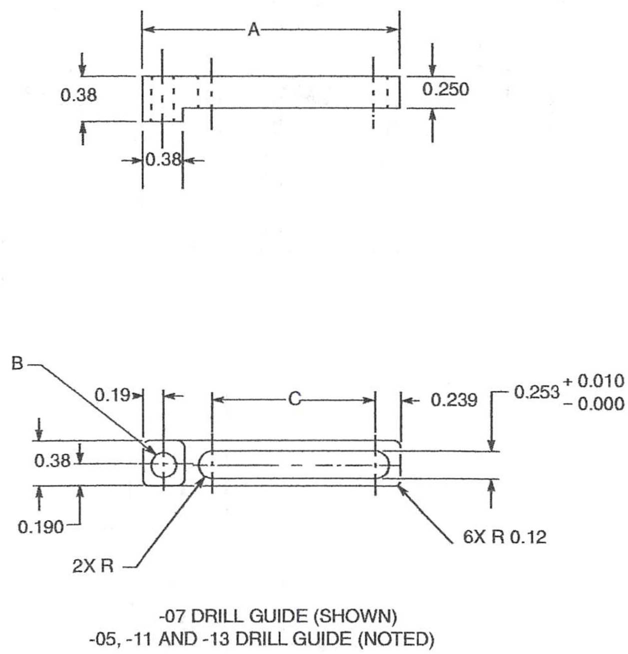


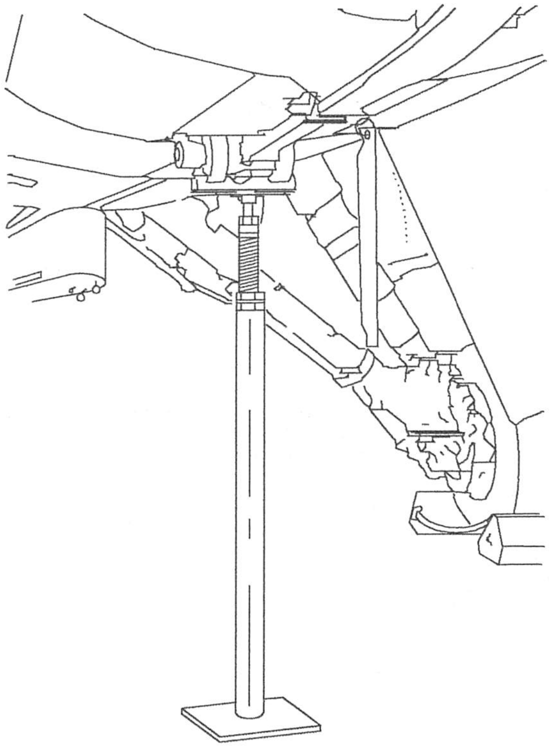
Figure 1-4. Fabrication of FFP Bracket Fixture Assembly, PN 9418101. (Sheet 4)

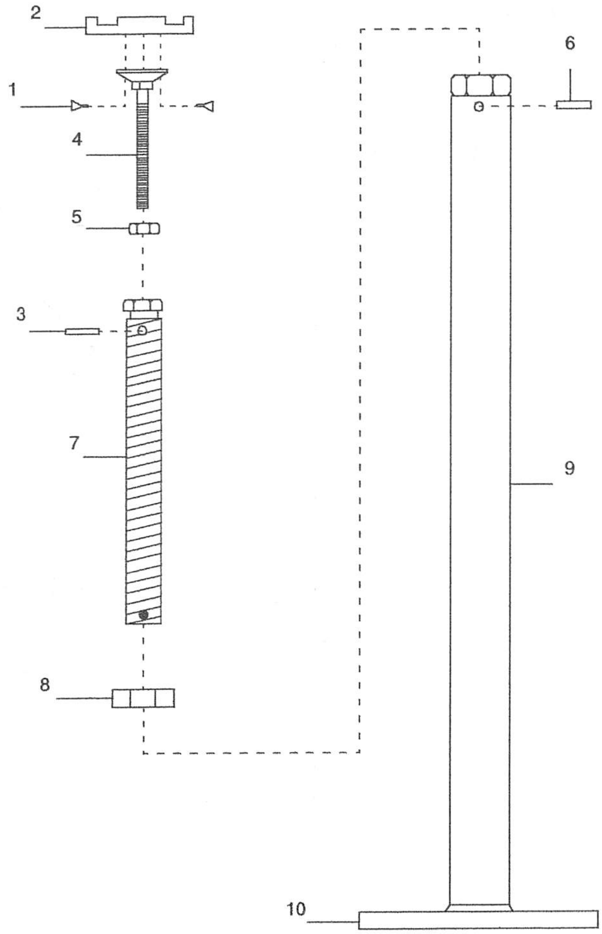
DASH NO.	A	B +0.001 -0.000	C
-05	2.38	∅ 0.201	1.50
-07	1.45	∅ 0.201	1.16
-11	1.45	∅ 0.290	1.16
-13	2.38	∅ 0.290	1.50



CO-00GV-00-1-0201X99

Figure 1-4. Fabrication of FFP Bracket Fixture Assembly, PN 9418101. (Sheet 5)





QTY REQ	LOCATOR NO.	NOMENCLATURE	MFG CODE	PART NO. OR MATERIAL
	LIST OF MATERIALS			
2	1	SCREW 1/4-28 X 1/2		NAS3346PA5-5
1	2	TAIL HOOK BLOCK 1 X 1-3/4 X 6-600 INCH		ALUMINUM ALLOY 2024 OR 7075
1	3	PIN		NAS561C6-18
1	4	FOOT, SWAYBRACE	88277	32-91080-5
1	5	NUT, PLAIN, HEX	76302	32-91081-7
1	6	PIN		MS39089-143
1	7	SCREWJACK, SWAYBRACE	76301	32-91079-3
2	8	NUT, PLAIN, HEX	76301	32-91081-5
1	9	BLACK PIPE 2-INCH OD 1-3/4-INCH ID X 27.125 INCHES		
1	10	STEEL PLATE 1/4 X 8 X 8 INCHES		

CO-00GV-00-1-0219X99

Figure 1-5. Fabrication of 16A13200L1-1 MLG Jacking Adapter Assembly. (Sheet 1 of 2)

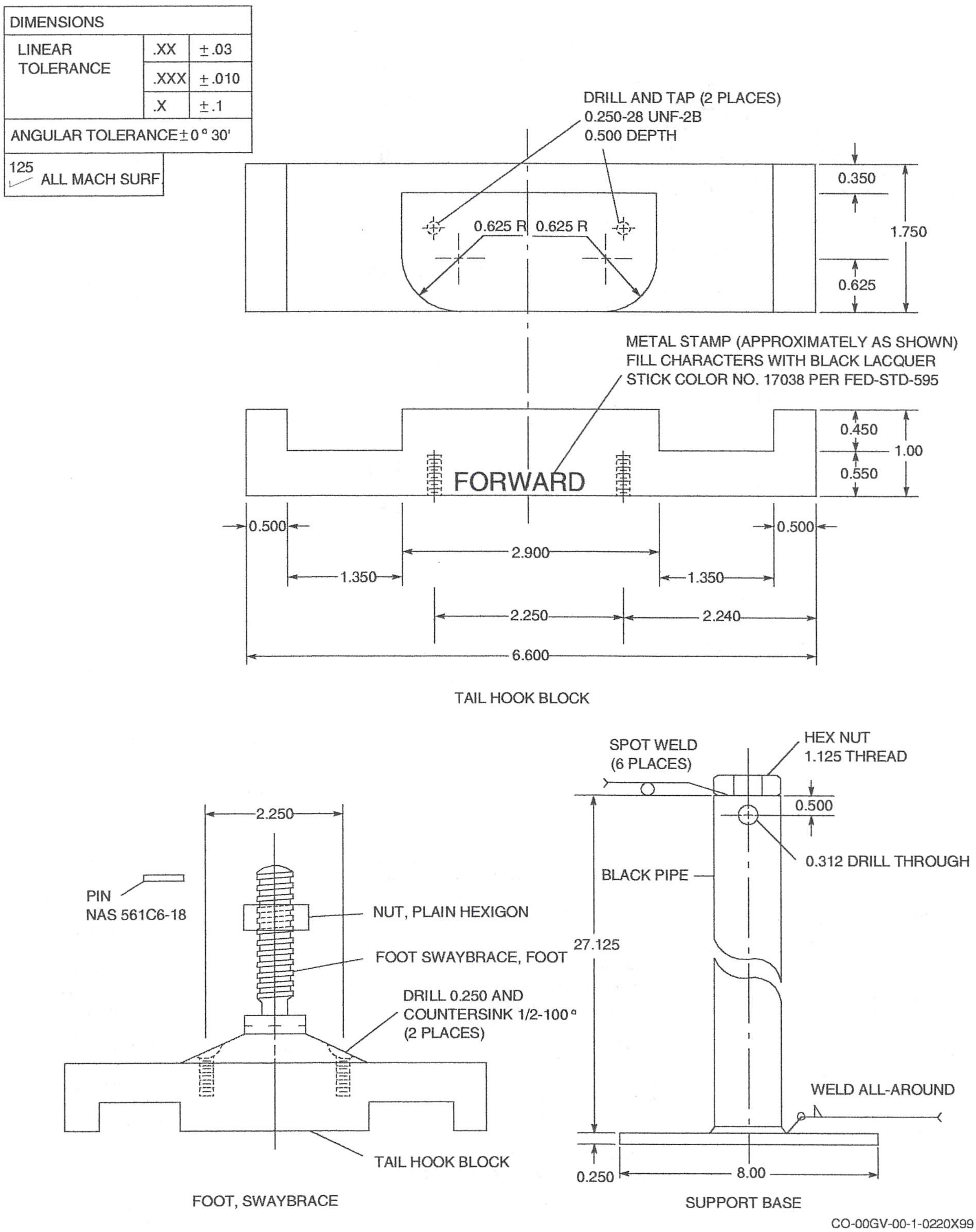
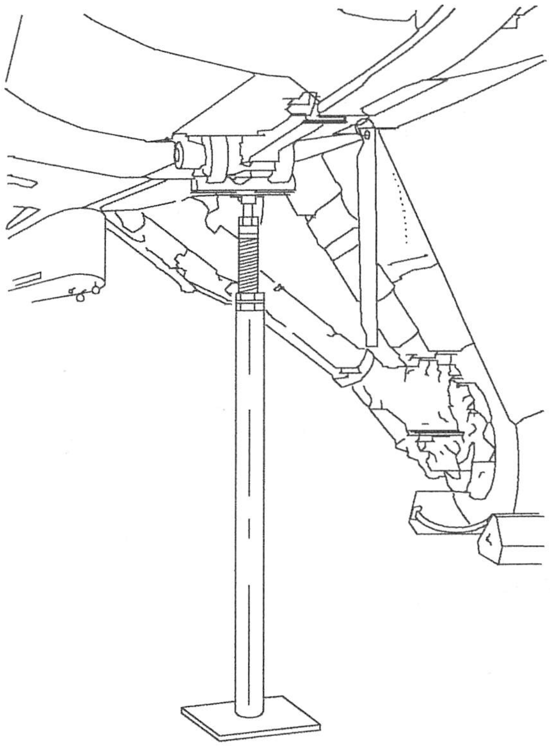
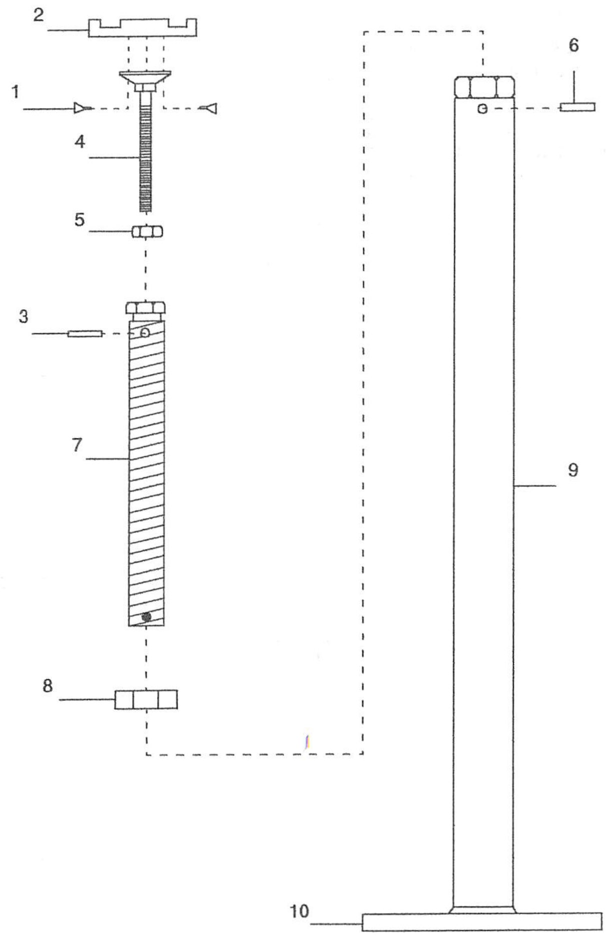


Figure 1-5. Fabrication of 16A13200L1-1 MLG Jacking Adapter Assembly. (Sheet 2)



APPLICATION



PART LOCATION

QTY REQ	LIST OF MATERIALS			
	LOCATOR NO.	NOMENCLATURE	MFG CODE	PART NO. OR MATERIAL
2	1	SCREW 1/4-28 X 1/2		NAS3346PA5-5
1	2	TAIL HOOK BLOCK 1 X 1-3/4 X 6-600 INCH		ALUMINUM ALLOY 2024 OR 7075
1	3	PIN		NAS561C6-18
1	4	FOOT, SWAYBRACE	88277	32-91080-5
1	5	NUT, PLAIN, HEX	76302	32-91081-7
1	6	PIN		MS39089-143
1	7	SCREWJACK, SWAYBRACE	76301	32-91079-3
2	8	NUT, PLAIN, HEX	76301	32-91081-5
1	9	BLACK PIPE 2-INCH OD 1-3/4-INCH ID X 27.125 INCHES		
1	10	STEEL PLATE 1/4 X 8 X 8 INCHES		

CO-00GV-00-1-0219X99

Figure 1-6. Fabrication of Screwjack Support. (Sheet 1 of 2)

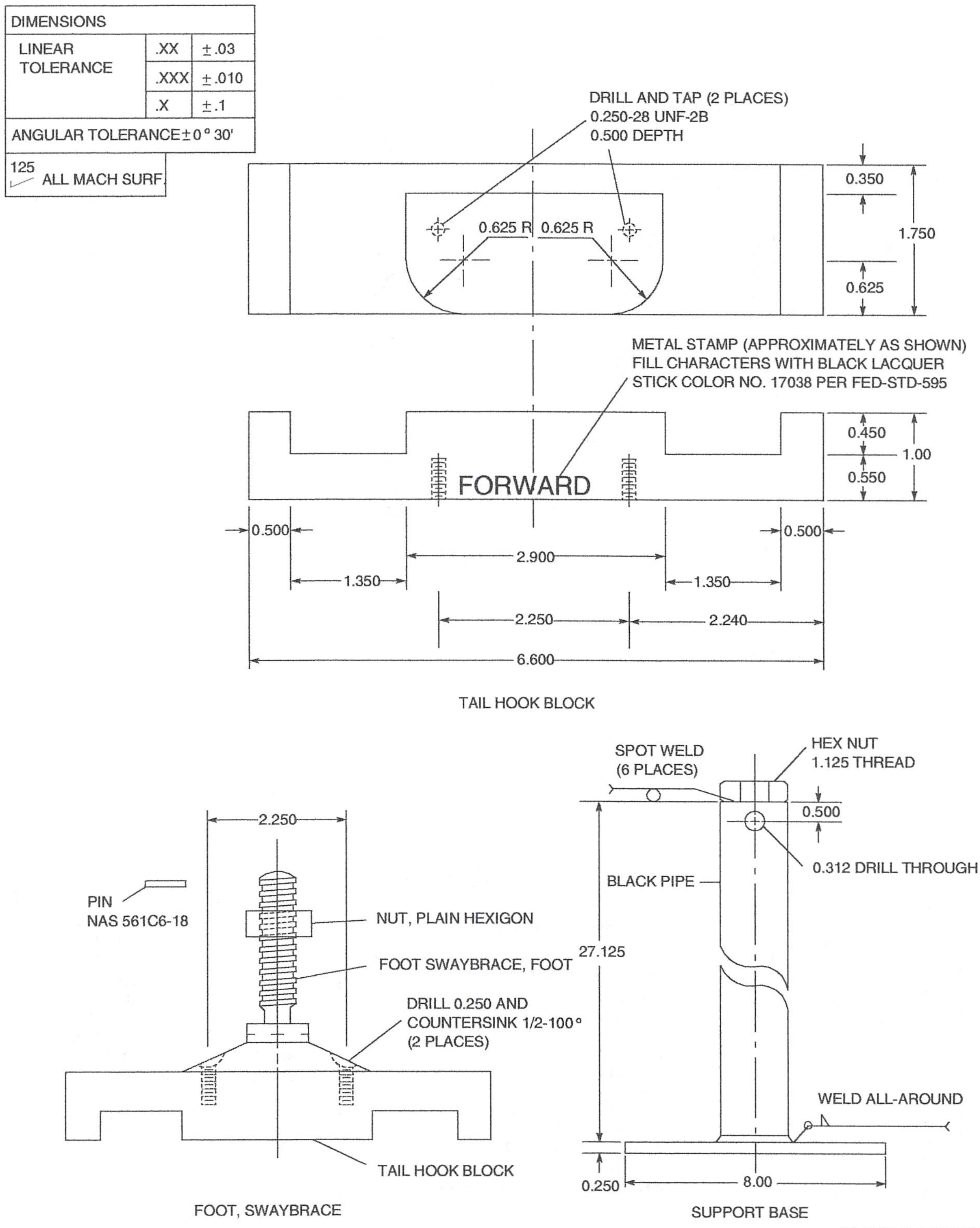
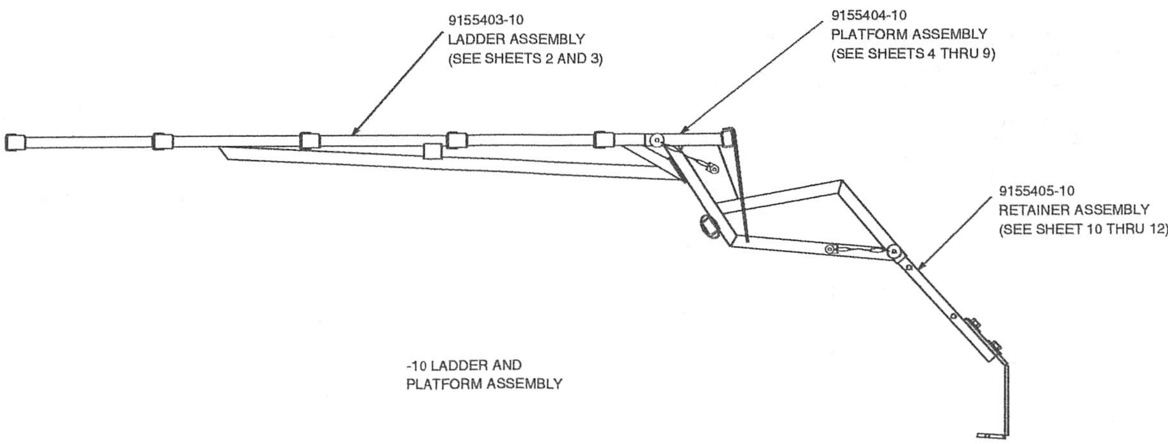


Figure 1-6. Fabrication of Screwjack Support. (Sheet 2)

NOTES:

1. THIS DRAWING WAS PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.



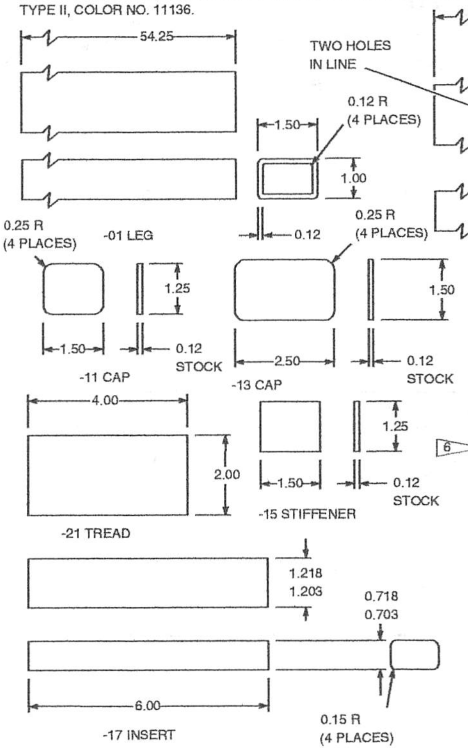
LIST OF MATERIALS			
QTY RQD	NOMENCLATURE	PART NO.	SPECIFICATIONS
	LADDER AND PLATFORM ASSEMBLY	-10	
1	LADDER ASSEMBLY	9155403-10	
1	PLATFORM ASSEMBLY	9155404-10	
1	RETAINER ASSEMBLY	9155405-10	

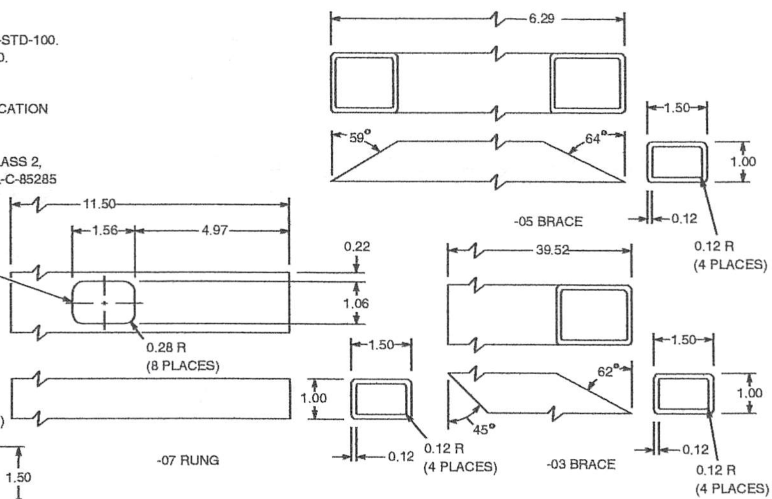
CO-00GV-00-1-0221X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 1 of 12)

NOTES:

1. THIS DRAWING WAS PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. 125/ ALL MACHINED SURFACES.
5. WELDING PER MIL-STD-2219, PROCESS OPTIONAL, CLASSIFICATION CLASS A.
6. -21 TREAD TO BE APPLIED TO TOP OF -07 RUNG.
7. ONE COAT PRIMER COATING PER MIL-P-85582 TYPE I, CLASS 2, FINISH WITH TWO COATS COATING POLYURETHANE PER MIL-C-85285 TYPE II, COLOR NO. 11136.





LIST OF MATERIALS

QTY RQD	NOMENCLATURE	PART NO.	SPECIFICATIONS
	LADDER ASSEMBLY	-10	
1	BOLT, REDUCED HEAD	NAS1581A5-8	
10	TREAD	-21	(39428) 6244T13
1	INSERT	-17	ALUMINUM ALLOY 7075, BAR PER QQ-A-225/9,
2	STIFFENER	-15	ALUMINUM ALLOY 6081, PER QQ-A-250/11, SHEET TEMPER T6
1	CAP	-13	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET TEMPER T6
10	CAP	-11	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET TEMPER T6
5	RUNG	-07	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6, SHEET, TEMPER T6
1	BRACE	-05	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6, SHEET, TEMPER T6
1	BRACE	-03	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
1	LEG	-01	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II

CO-00GV-00-1-0222X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 2)

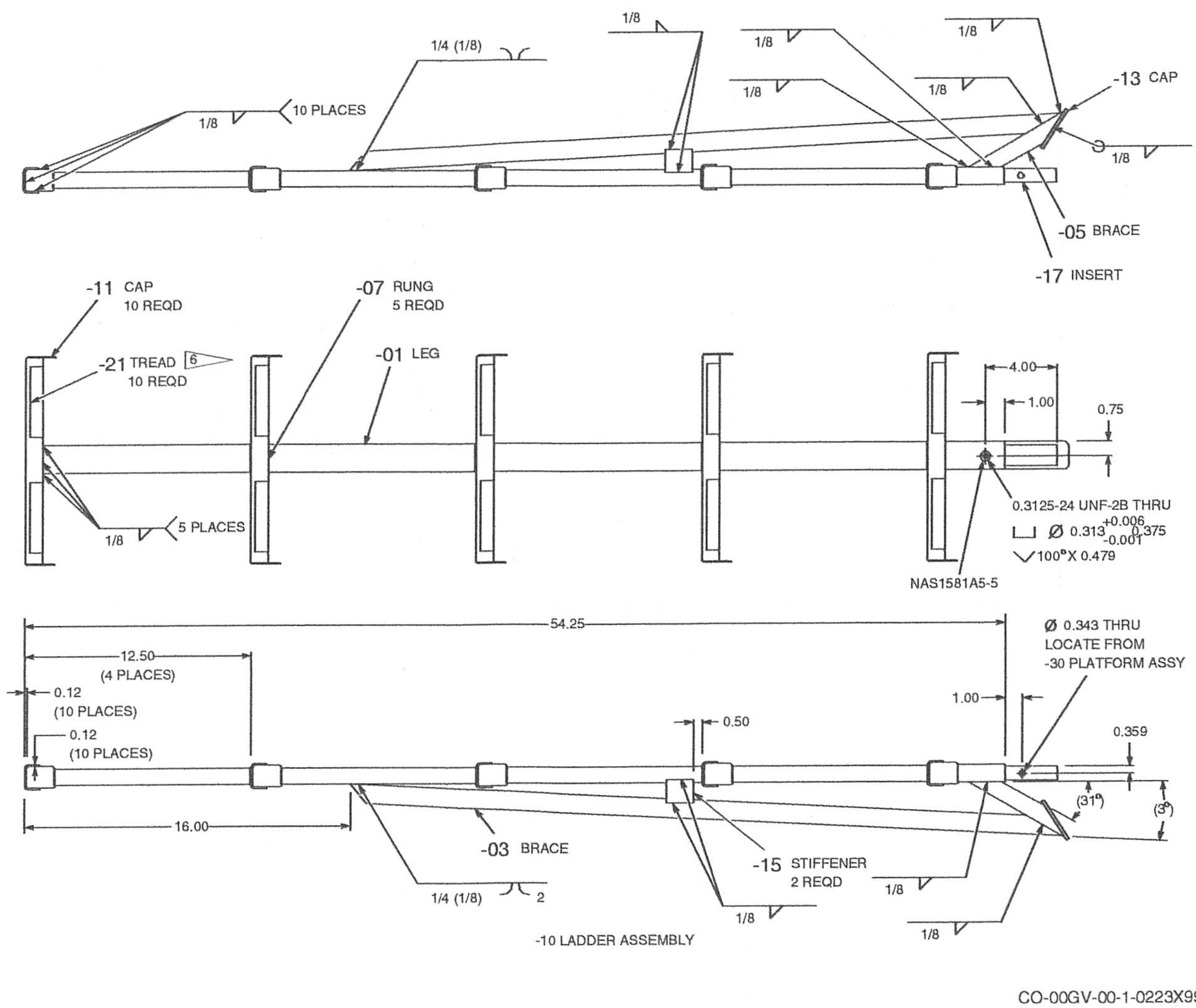
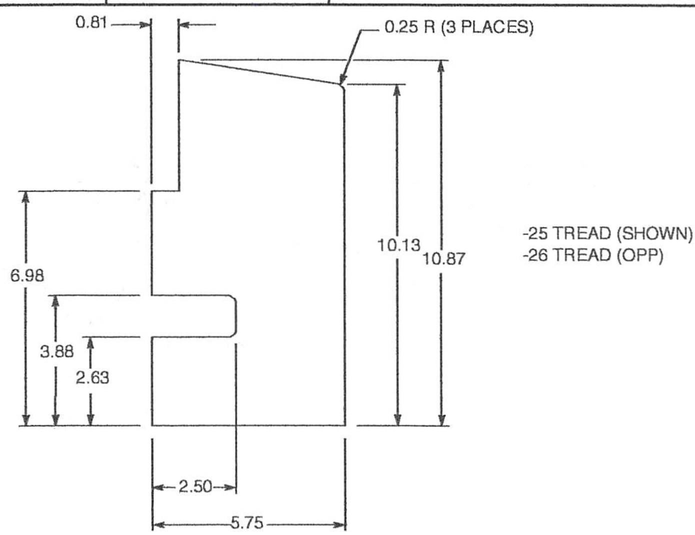


Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 3)

	LIST OF MATERIALS			
	QTY RQD	NOMENCLATURE	PART NO.	SPECIFICATIONS
	2	PW SUBASSEMBLY	-30	
	2	RIVET	MS20604-ADBC10	
	2	BRACKET	AN 743-12	
	4	SLEEVE	MS51844-82	
	AR	WIRE ROPE	M83420/1-001	WIRE ROPE, PER MIL-W-83420
		PLATFORM ASSEMBLY	-10	
	2	PAD	-27	HOSE, PER MIL-H-8794 SIZE 24
6	1	TREAD	-28 (OPP)	(39428) 6244T13
6	1	TREAD	-25	(39428) 6244T13
	2	CAP	-21	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET TEMPER T6
	1	STEP	-17	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET, TEMPER T6
	2	STIFFENER	-15	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET, TEMPER T6
	1	BRACE	-13	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
	1	BRACE	-11	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
	1	BRACE	-07	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
	2	BRACE	-05	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
	1	BRACE	-03	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6 TEMPER T6 TYPE II
	1	TRUNK	-01	TUBE, ALUMINUM ALLOY 6061, PER WW-T-700/6



NOTES:

1. THIS DRAWING WAS PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. 125√ ALL MACHINED SURFACES.
5. WELDING PER MIL-STD-2219, PROCESS OPTIONAL, CLASSIFICATION CLASS A.
6. -25 TREAD AND -26 (OPP) TREAD (OPP) TO BE APPLIED TO TOP OF -17 STEP.
7. ONE COAT PRIMER COATING PER MIL-P-85582 TYPE I, CLASS 2, FINISH WITH TWO COATS COATING POLYURETHANE PER MIL-C-85285 TYPE II, COLOR NO. 11136.

CO-00GV-00-1-0224X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 4)

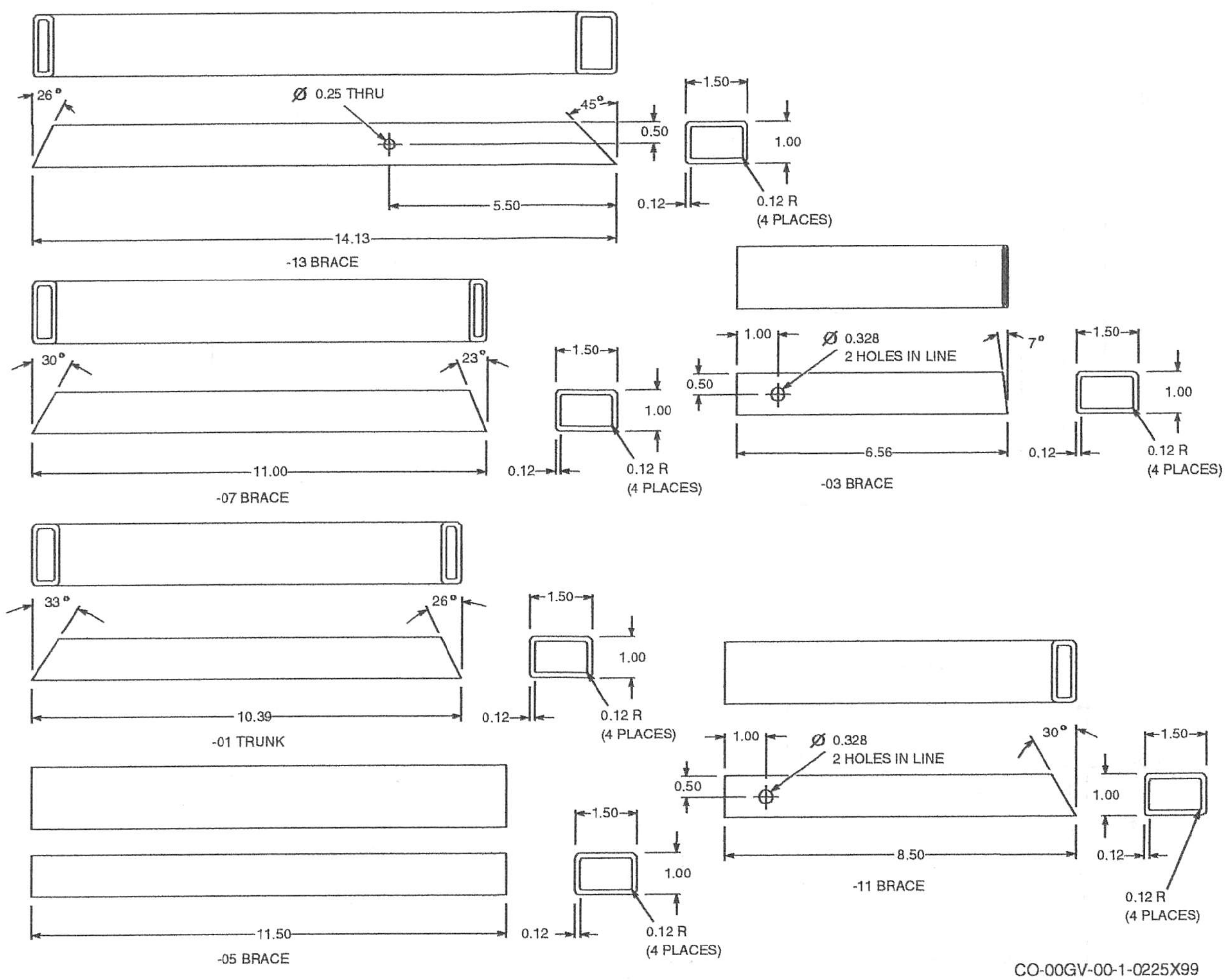


Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 5)

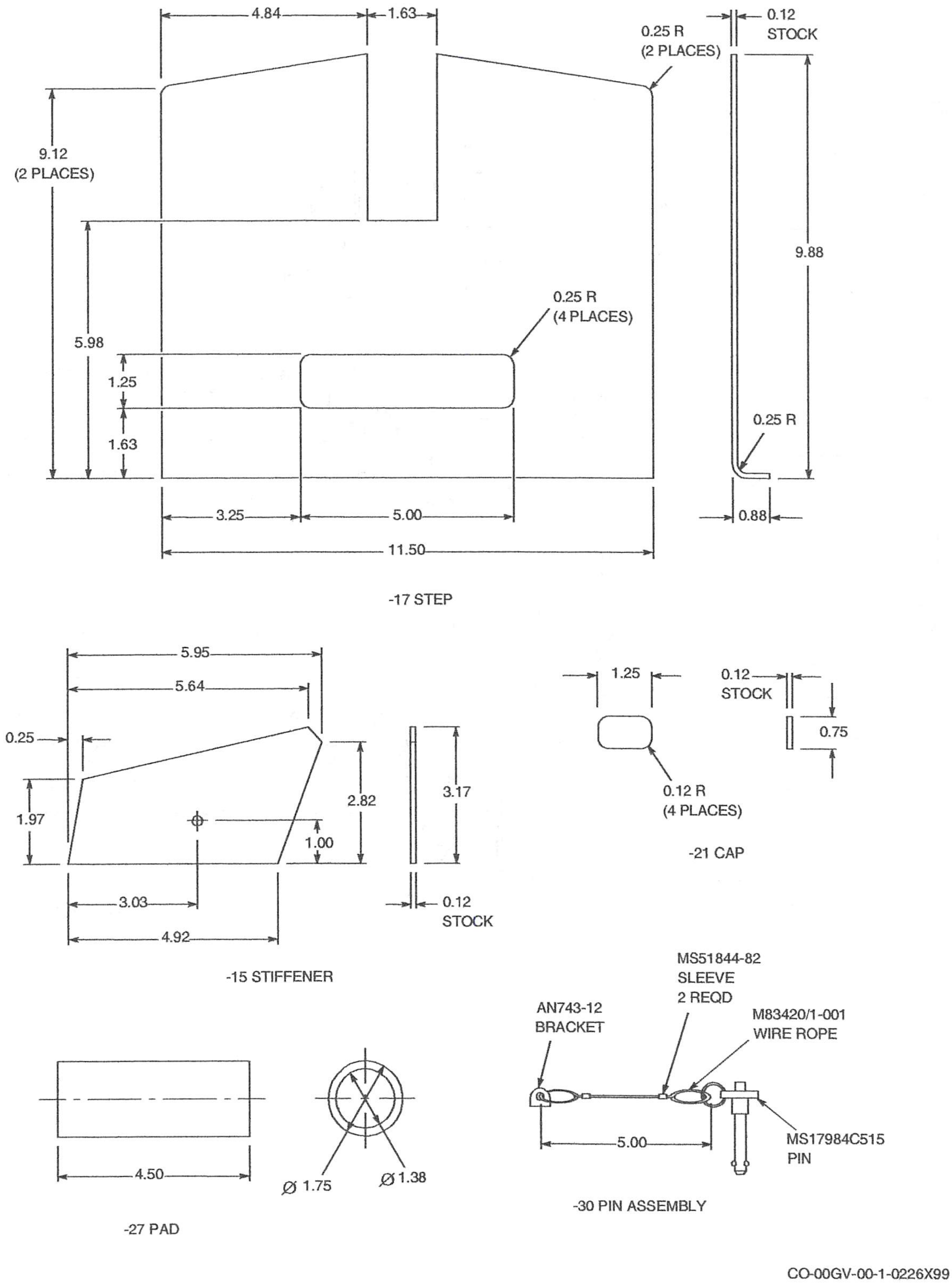
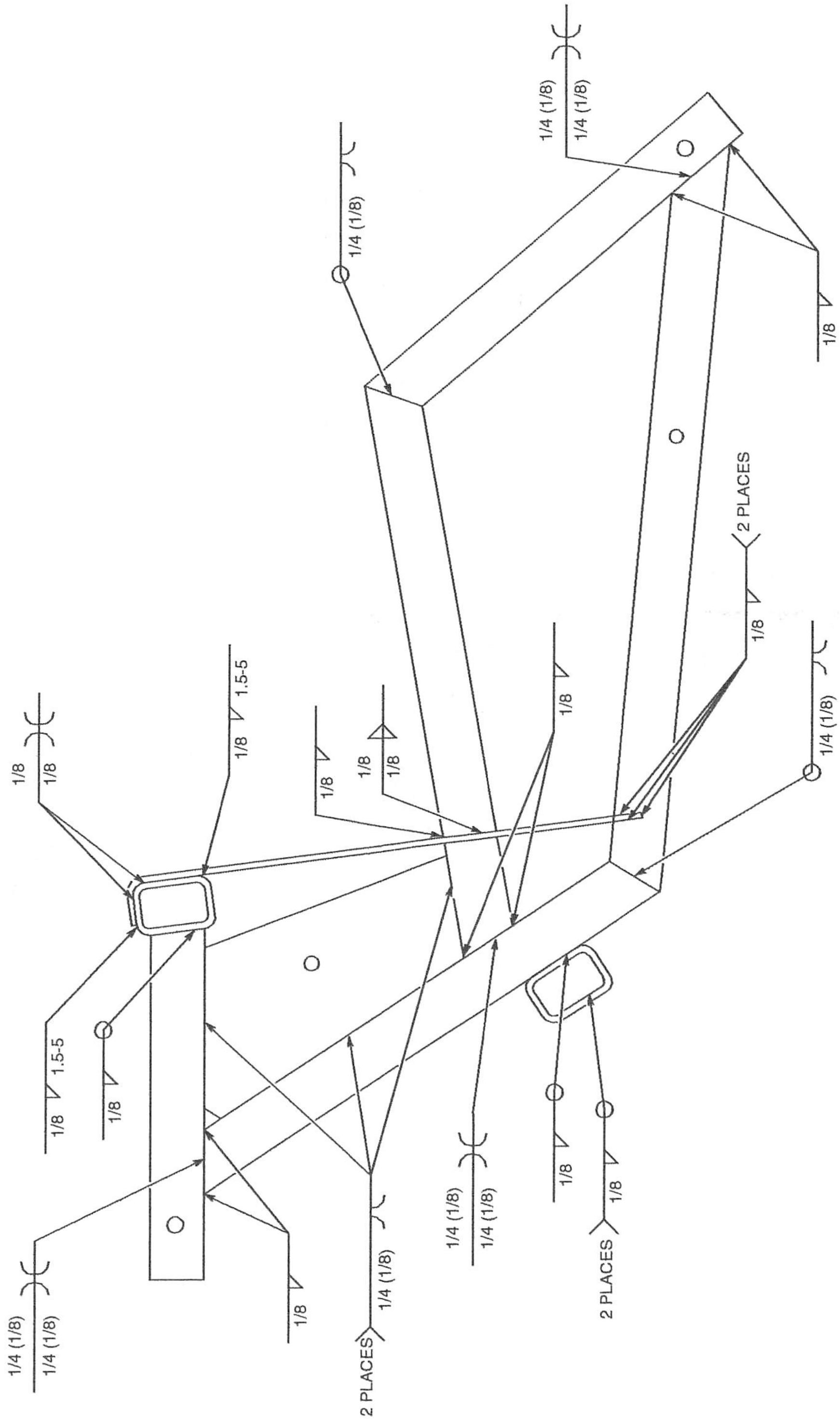
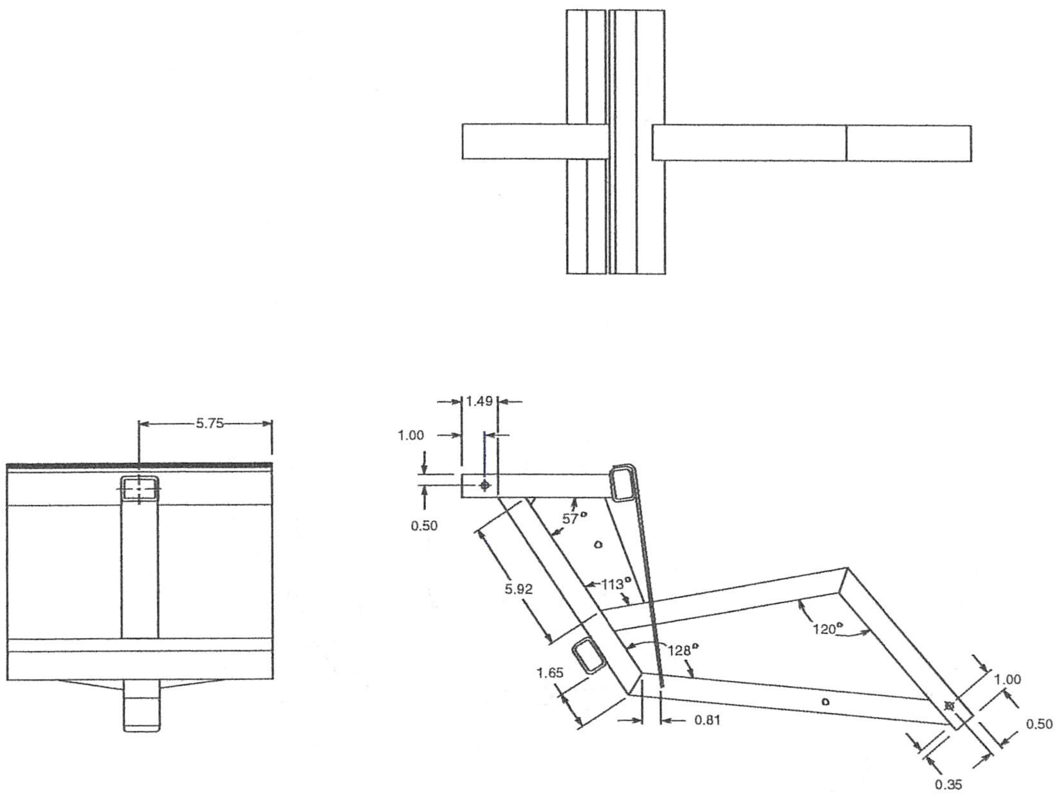


Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 6)



CO-00GV-00-1-0227X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 7)



CO-00GV-00-1-0228X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 8)

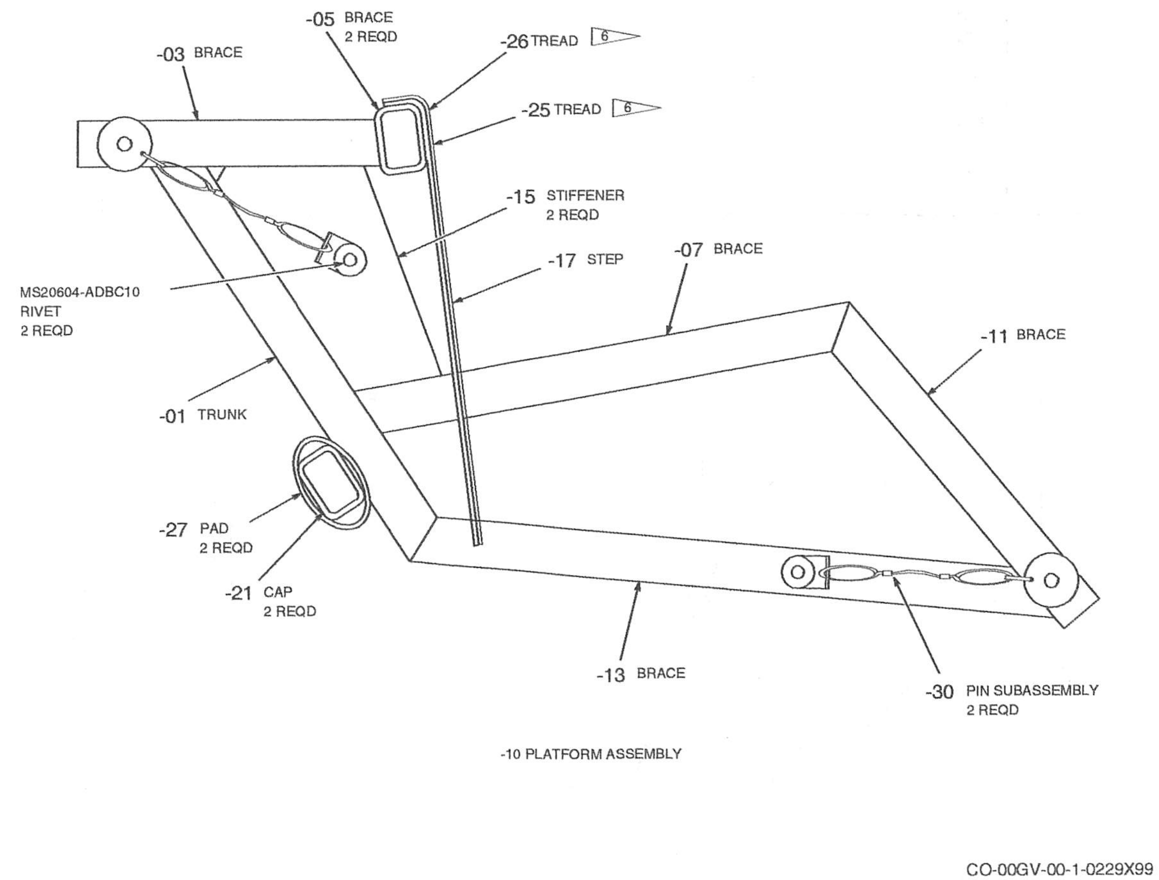
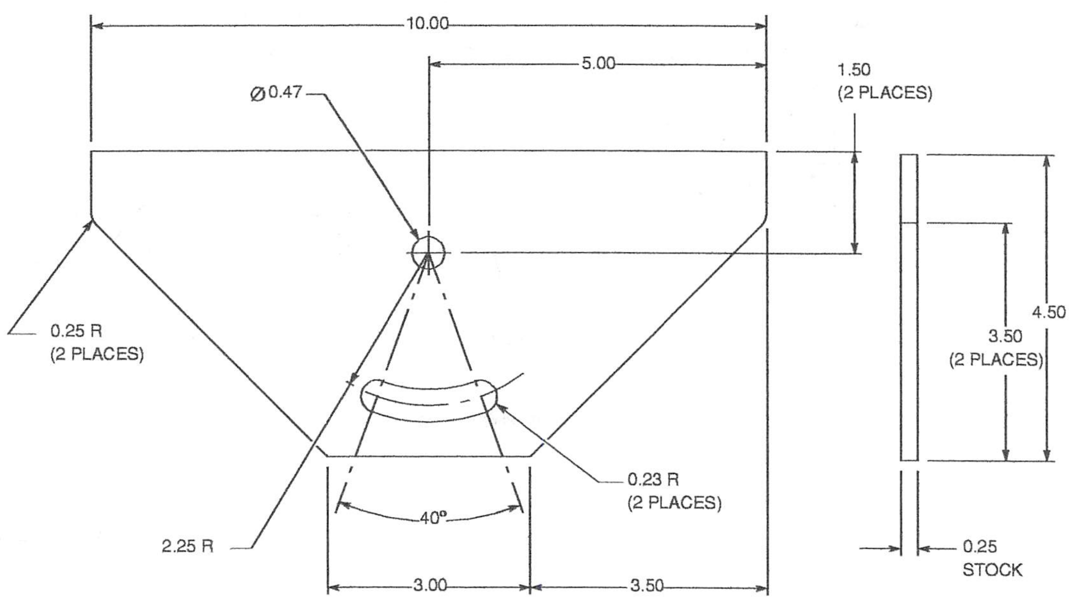


Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 9)

LIST OF MATERIALS			
QTY RQD	NOMENCLATURE	PART NO.	SPECIFICATIONS
	RETAINER ASSEMBLY	-10	
AR	LUBRICANT		LUBRICANT, DRY THINFILM, NON-CURING, PER DOD-L-88645
1	WASHER	MS51859-21	
10	BOLT	NAS6207-1	
5	INSERT	-07	ALUMINUM ALLOY 7075, BAR, PER QQ-A-225/9
1	PLATE	-05	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET, TEMPER T6
1	PLATE	-03	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET, TEMPER T6
1	PLATE	-01	ALUMINUM ALLOY 6061, PER QQ-A-250/11, SHEET, TEMPER T6



NOTES:

1. THIS DRAWING WAS PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. 125/ ALL MACHINED SURFACES.
5. WELDING PER MIL-STD-2219, PROCESS OPTIONAL, CLASSIFICATION CLASS A.
6. ONE COAT PRIMER COATING PER MIL-P-85582 TYPE I, CLASS 2, FINISH WITH TWO COATS COATING POLYURETHANE PER MIL-C-85285 TYPE II, COLOR NO. 11136.

CO-00GV-00-1-0230X99

Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 10)

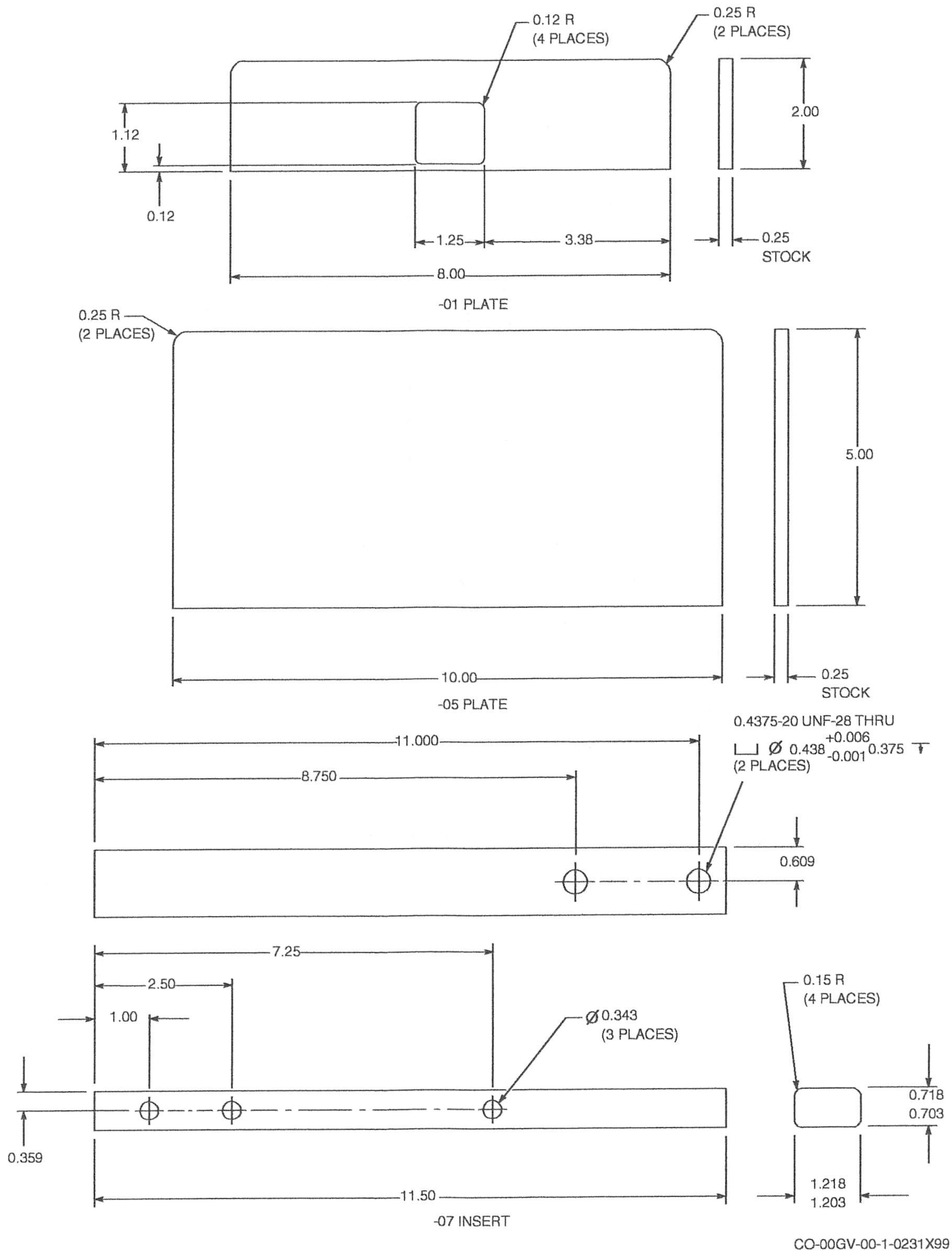


Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 11)

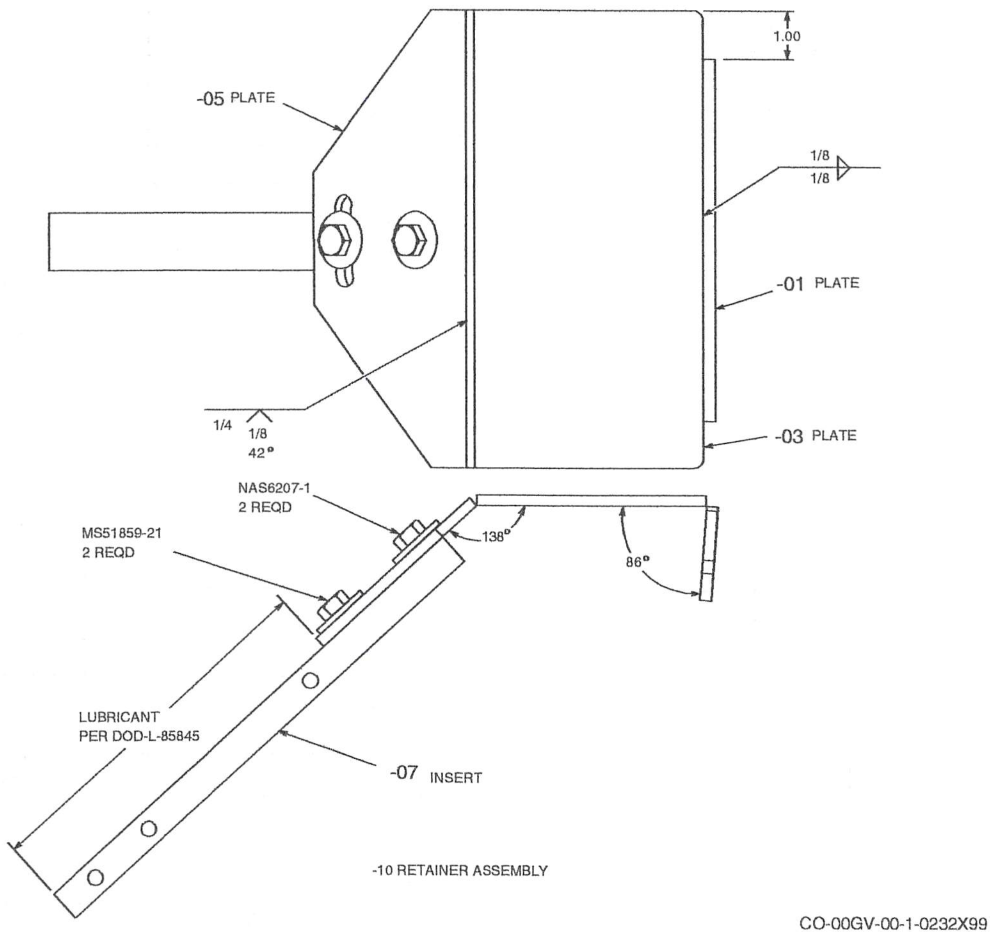


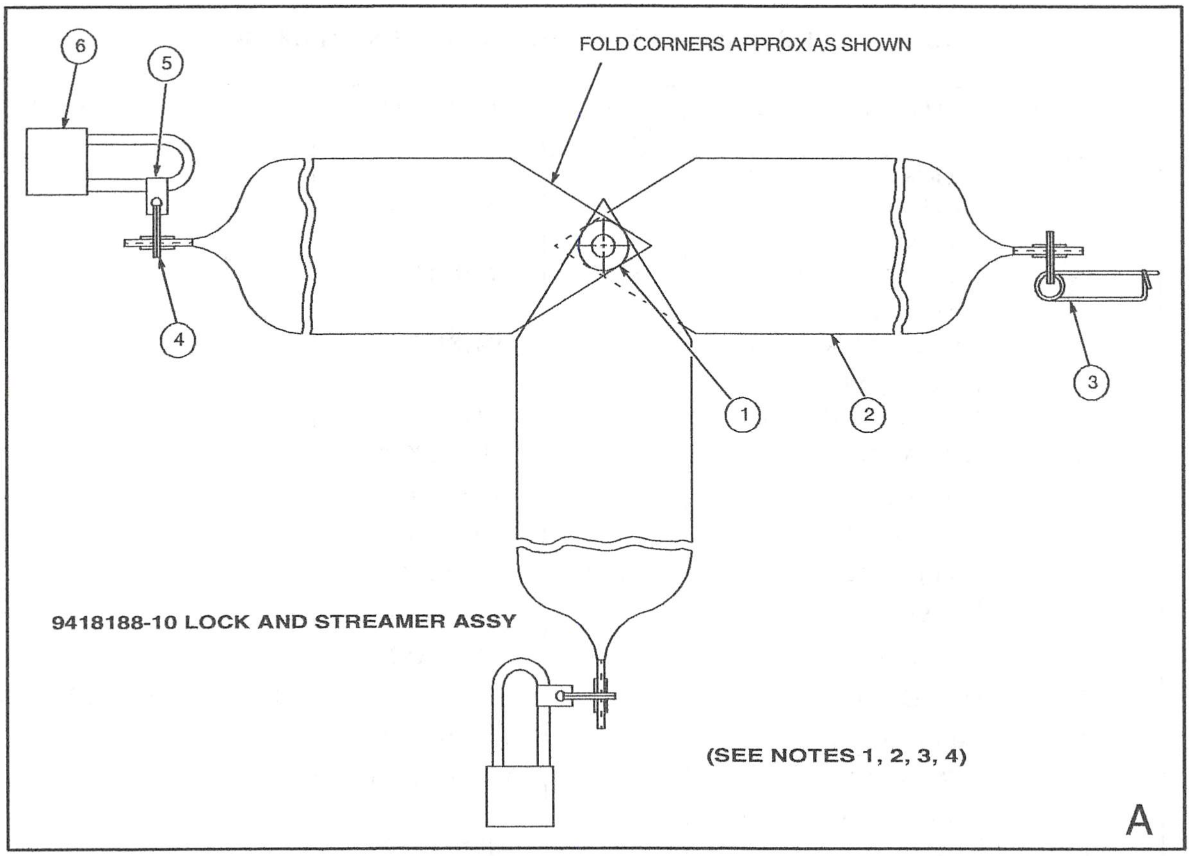
Figure 1-7. Fabrication of 9155399 Mobility Ladder and Platform Assembly. (Sheet 12)

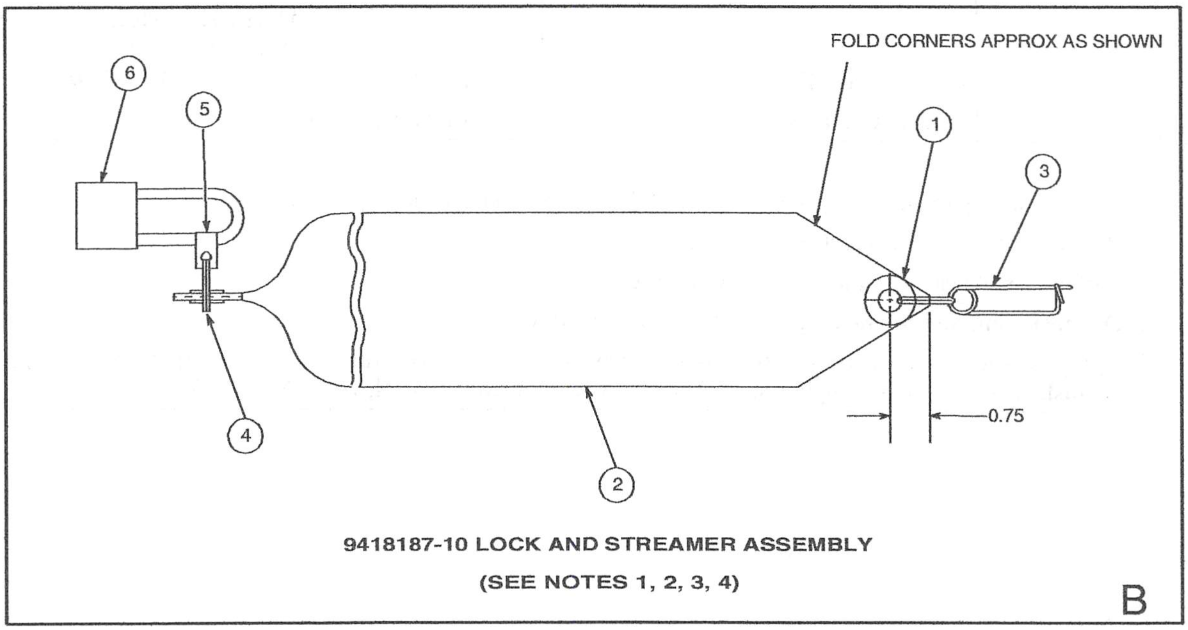
Table 1-3. Fabrication of Lock Streamer Kit, PN 9418189-10.

QTY REQD	LOCATOR NO	NOMENCLATURE	MFG CODE	PART NO.	SPECIFICATION
1		LOCK STREAMER KIT	98747	9418189-10	
1	A	LOCK AND STREAMER ASSY	98747	9418188-10	
1	B	LOCK AND STREAMER ASSY	98747	9418187-10	
1	C	LOCK AND STREAMER ASSY	98747	9418186-10	
2	1	GROMMET		MS20230B2	
4	2	STREAMER		NAS1756-36	
2	3	SAFETY PIN		AN416-3	
5	4	SPLIT RING	OCUJ4	RING-9	
3	5	CLAMP		AN742-3	
3	6	PADLOCK	3A054	1557A52	
AR	7	WIRE ROPE			0.046 DIA, TYPE II MIL-W-83420
2	8	SLEEVE, SWAGING		MS51844-21	
1	9	PIN, SPRING		MS16562-226	
1	10	STREAMER, WARNING		MS51700-24	
1	11	BOLT, CAPTIVE		9418186-03	ALTERED ITEM, MAKE FROM AN4-12 AL ALLOY BAR 6061-T6 PER QQ-A-225/8
1	12	LOCK, GROUND		9418186-01	

NOTES:

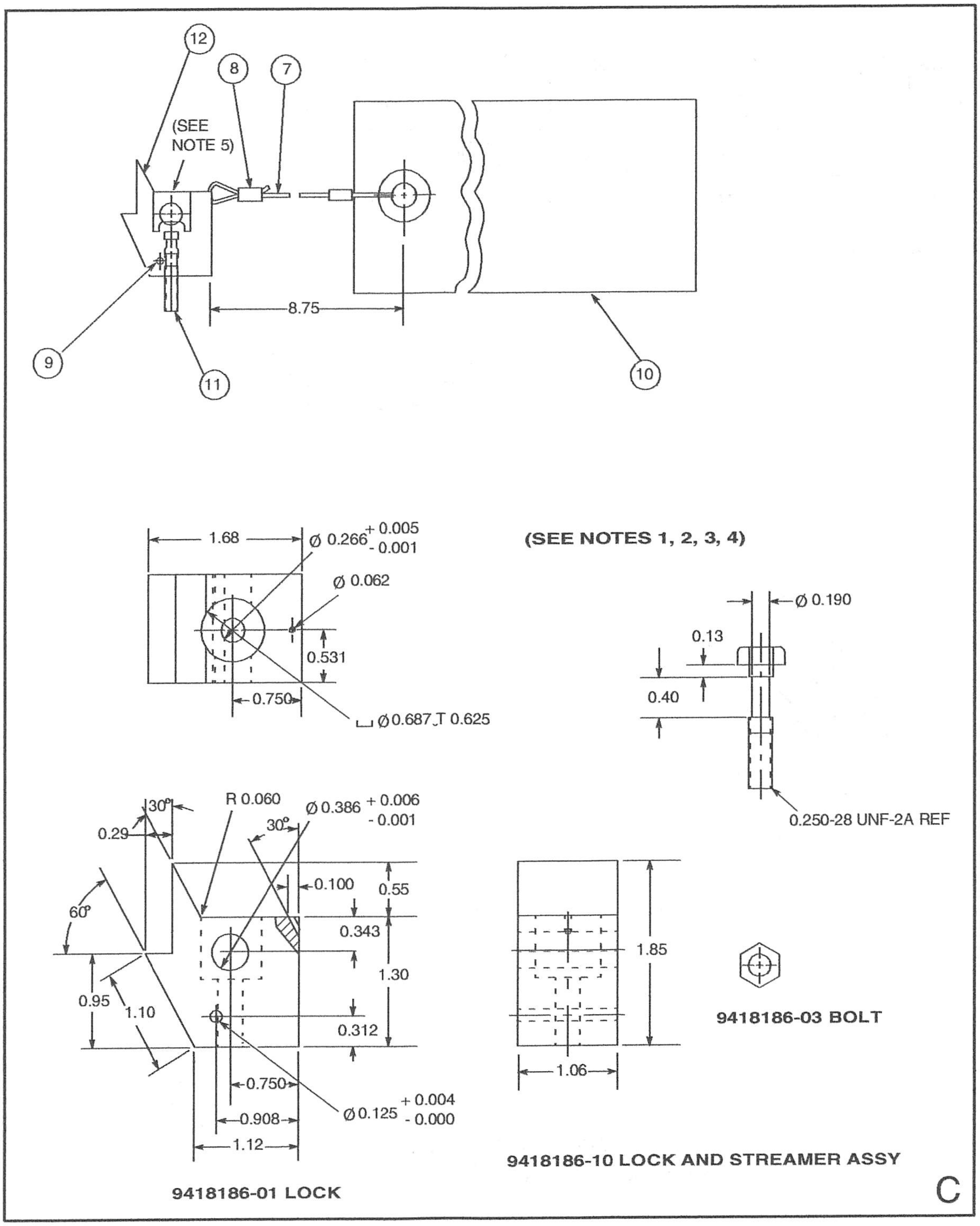
1. Identify with part number per MIL-STD-130. Method and location optional.
2. Remove all burrs and break sharp edges 0.010 max.
3. Surface roughness 125 unless otherwise noted.
4. Dimensioning and tolerancing per ANSI Y14.5M-1982.
5. Apply anodic coating (MIL-A-8625, type I, class I) and one coat primer coating (MIL-P-85582, type I, class II); finish with two coats polyurethane coating (MIL-C-85285, type II, color No. 11136).





CO-00GV-00-1-0202X99

Figure 1-8. Fabrication of Lock Streamer Kit, PN 9418189-10. (Sheet 1 of 2)



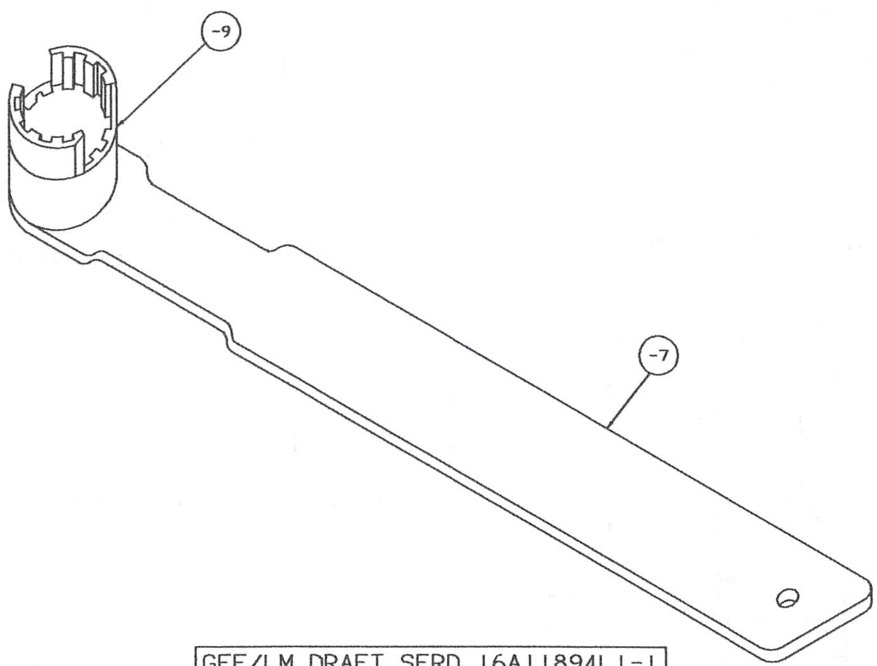
CO-00GV-00-1-0203X99

Figure 1-8. Fabrication of Lock Streamer Kit, PN 9418189-10. (Sheet 2)

LIST OF MATERIALS					
QTY REQD	LOCATOR NUMBER	NOMENCLATURE	MFG CODE	PART NUMBER	SPECIFICATIONS
1	-7	BAR STK SIZE 1/4X2X13			MIL-S-6758 & NOTED SEE NOTES 7 & 8
1	-9	SOCKET	55719	LES462 •LES465 •K1796A1	SEE NOTES 9 & 10
AR	-11	COATING			MIL-C-16173-GR4

•ALTERNATE SOCKET

TOLERANCES		
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES		
LINEAR TOL	XX	±0 03
	XXX	±0 010
	X	±0 1
ANGULAR TOL		± 0° 30′
250 √ ALL MACH SURF NOTED		



GFE/LM DRAFT SERD 16A11894L1-1
ECN'S INCORP 15T18

CO-00GV-00-1-0204X99

Figure 1-9. Fabrication of Wrench Assembly, Spline Socket, Inlet Strut, PN 16A11894L1-1. (Sheet 1 of 2)

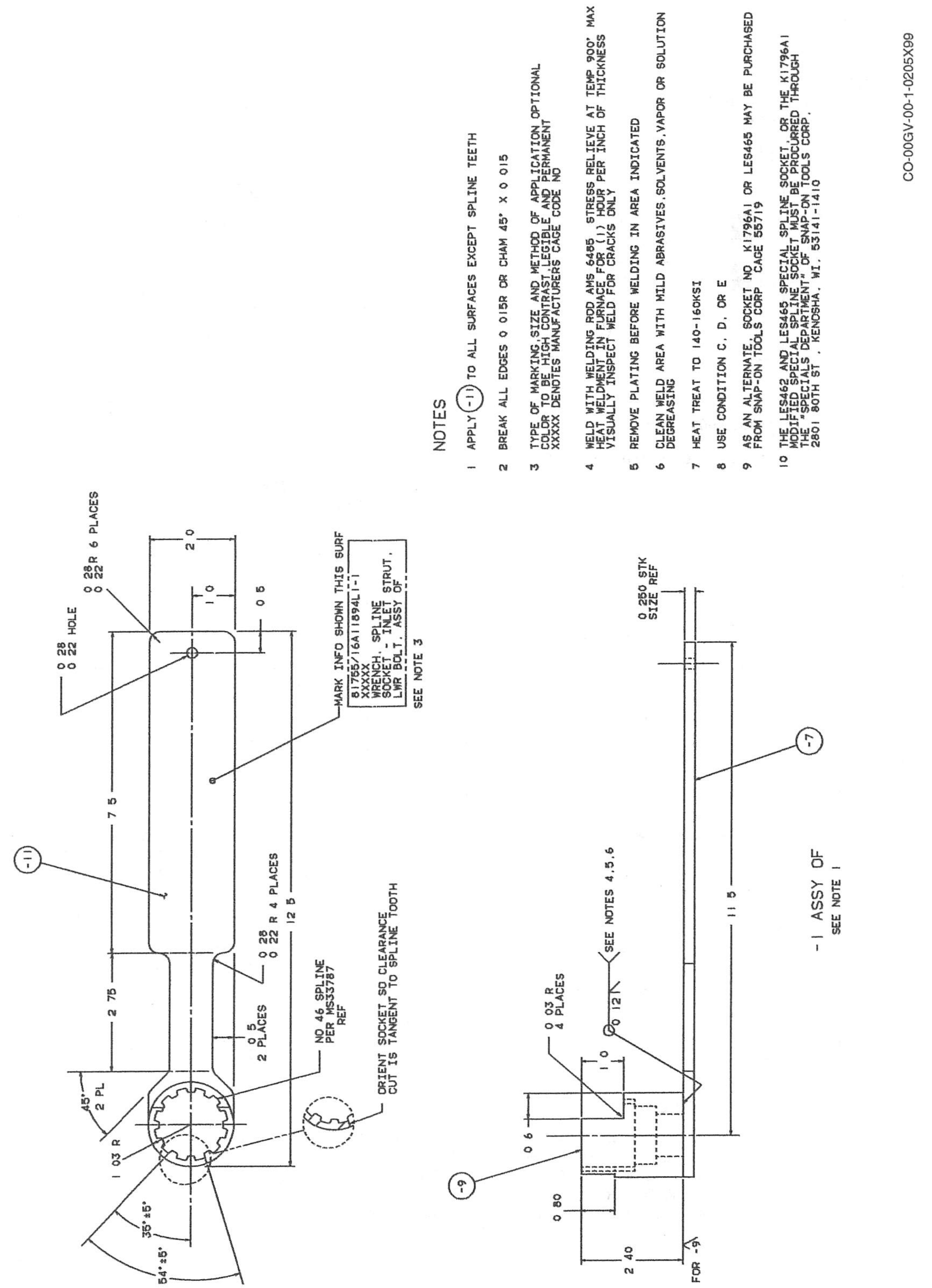
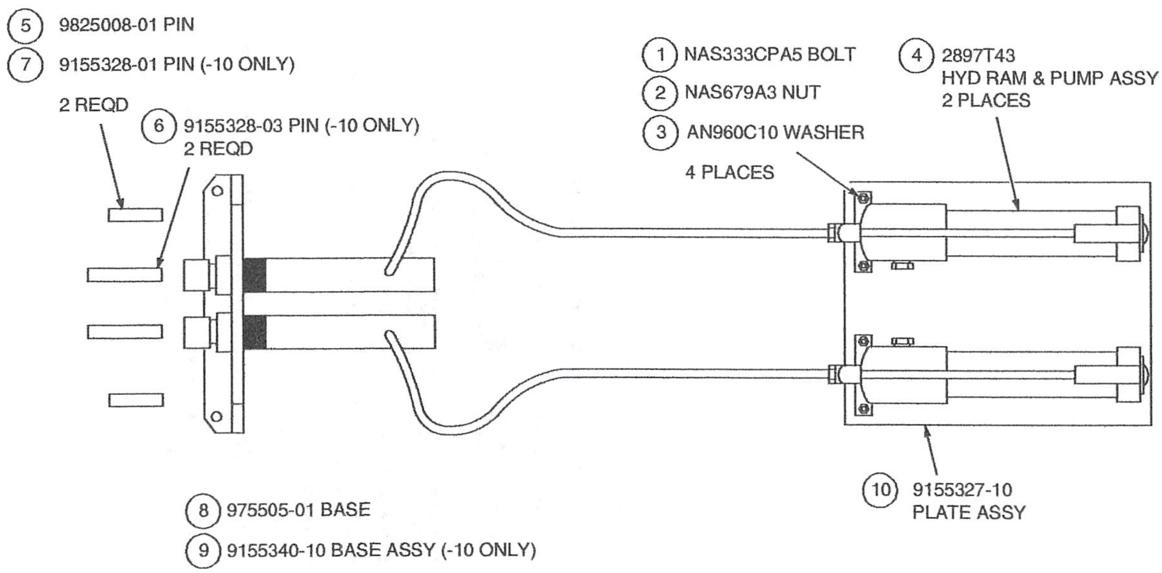


Figure 1-9. Fabrication of Wrench Assembly, Spline Socket, Inlet Strut, PN 16A11894L1-1. (Sheet 2)



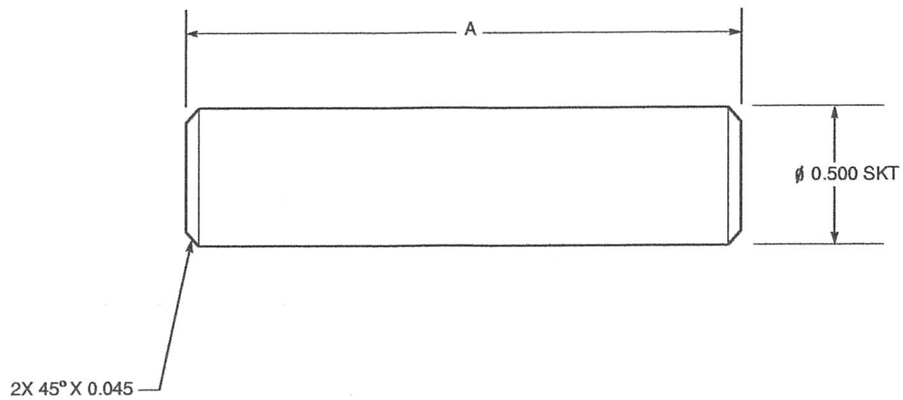
LIST OF MATERIALS						
QTY REQ'D -30	QTY REQ'D -10	LOCATOR NO.	NOMENCLATURE	MFG CODE	PART NO.	SPECIFICATION
4	4	1	BOLT		NAS333CPA5	
4	4	2	NUT		NAS679A3	
4	4	3	WASHER		AN960C10	
2	2	4	HYD RAM & PUMP ASSY	3A054	2897T43	
2		5	PIN		9825008-01	STEEL, CHROME-MOLYBDENUM (4130) BAR PER MIL-S-6758
	2	6	PIN		9155328-03	ALUM ALLOY 2024, BAR PER QQ-A-225/6 TEMPER T6
	2	7	PIN		9155328-01	ALUM ALLOY 2024, BAR PER QQ-A-225/6 TEMPER T6
1		8	BASE		975505-01	STEEL, CHROME-MOLYBDENUM (4130) BAR PER MIL-S-6758
	1	9	BASE ASSY		9155340-10	STRUCTURAL STEEL, BAR, PER ASTM A36
1	1	10	PLATE ASSY		9155327-10	ALUM ALLOY 2024 SHEET PER QQA250/4 TEMPER 4

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. THE DISTRIBUTION STATEMENT WAS PREPARED IN ACCORDANCE WITH AIR FORCE REGULATION B3-3.
4. -10 TOOL KIT USED IN THE REPAIR OF (81755) 16W30-3 THRU -888 WING BOX ASSY F-16 ACFT.

CO-00GV-00-1-0206X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 1 of 9)



9155328-01 PIN (SHOWN)
9155328-03 PIN (NOTED)

TABLE

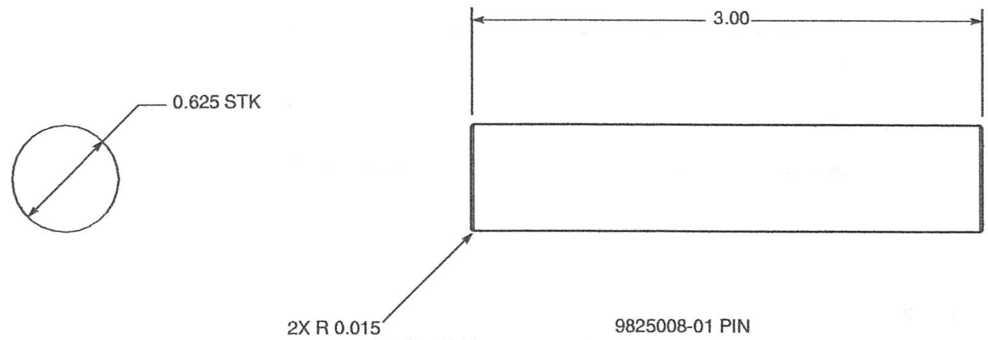
DASH NO.	DIM A
-01	2.50
-03	3.50

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. THE DISTRIBUTION STATEMENT WAS PREPARED IN ACCORDANCE WITH AIR FORCE REGULATION 83-3.

CO-00GV-00-1-0207X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 2)

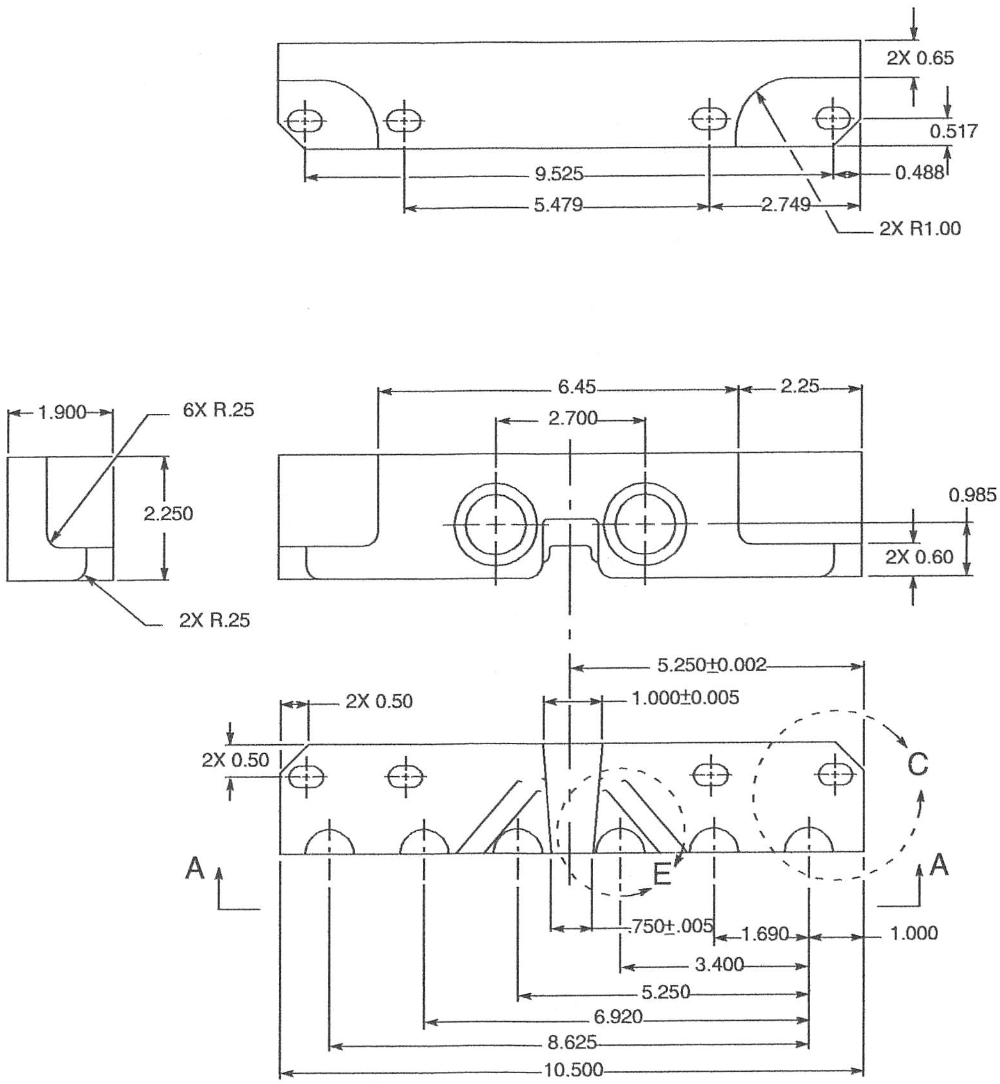


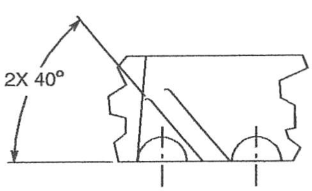
NOTES:

1. THIS DRAWING PREPARED IN ACCORDANCE WITH MIL-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130. LOCATION AND METHOD OPTIONAL.
3. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME Y14.5M-1994
4. REMOVE ALL BURRS AND SHARP EDGES EQUIVALENT TO .010 MAX.
5. SURFACE ROUGHNESS 125 UNLESS OTHERWISE SPECIFIED.
6. HEAT TREAT TO 180/200 KSI PER MIL-H-6875.

CO-00GV-00-1-0208X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 3)





NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH MIL-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130. LOCATION AND METHOD OPTIONAL.
3. DIMENSIONING AND TOLERANCING IN ACCORDANCE WITH ASME T14.5M-1994.
4. REMOVE ALL BURRS AND SHARP EDGES EQUIVALENT TO .010 MAX.
5. SURFACE ROUGHNESS 125√ UNLESS OTHERWISE SPECIFIED.
6. HEAT TREAT TO 180/200 KSI PER MIL-H-6875.
7. INSIDE RADII .010 MAX UNLESS OTHERWISE SPECIFIED.
8. UNLESS OTHERWISE NOTED GENERAL TOLERANCES ARE: .XX = 0.03, .xxx = 0.010, AND ANGLES = 2 DEGREES.

CO-00GV-00-1-0209X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 4)

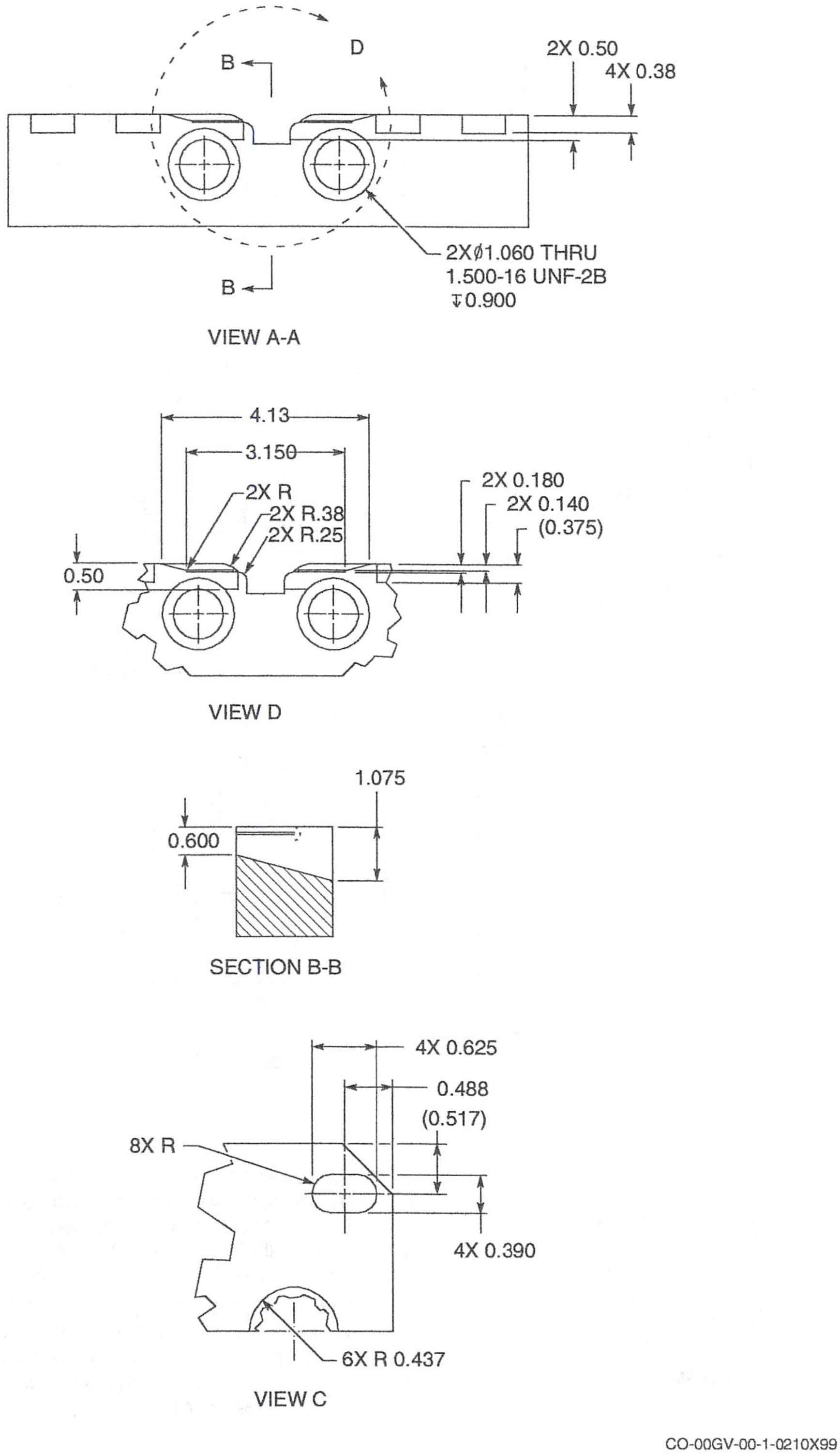
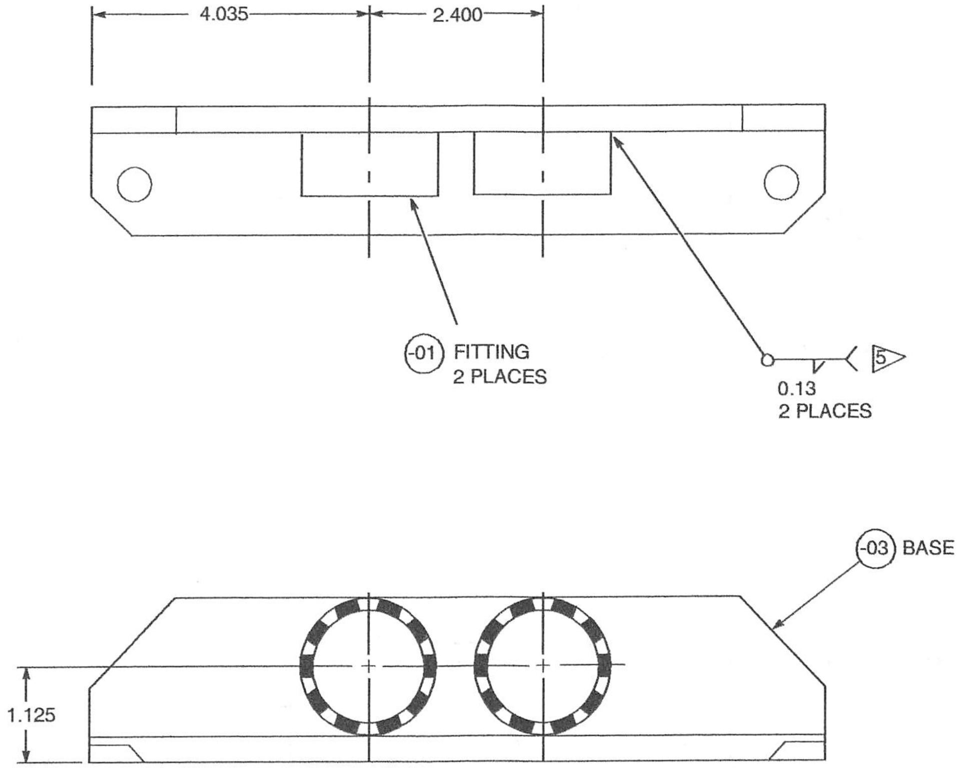


Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 5)



9155340-10 BASE ASSY

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. THE DISTRIBUTION STATEMENT WAS PREPARED IN ACCORDANCE WITH AIR FORCE REGULATION 83-3.

5 WELD, PER MIL-STD-2219, CLASS C.

6 APPLY ONE COAT PRIMER COATING PER MIL-P-85582, TYPE 1, CLASS 2, FINISH WITH TWO COATS COATING, POLYURETHANE PER MIL-C-85285, TYPE II, COLOR NO. 11136.

CO-00GV-00-1-0211X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 6)

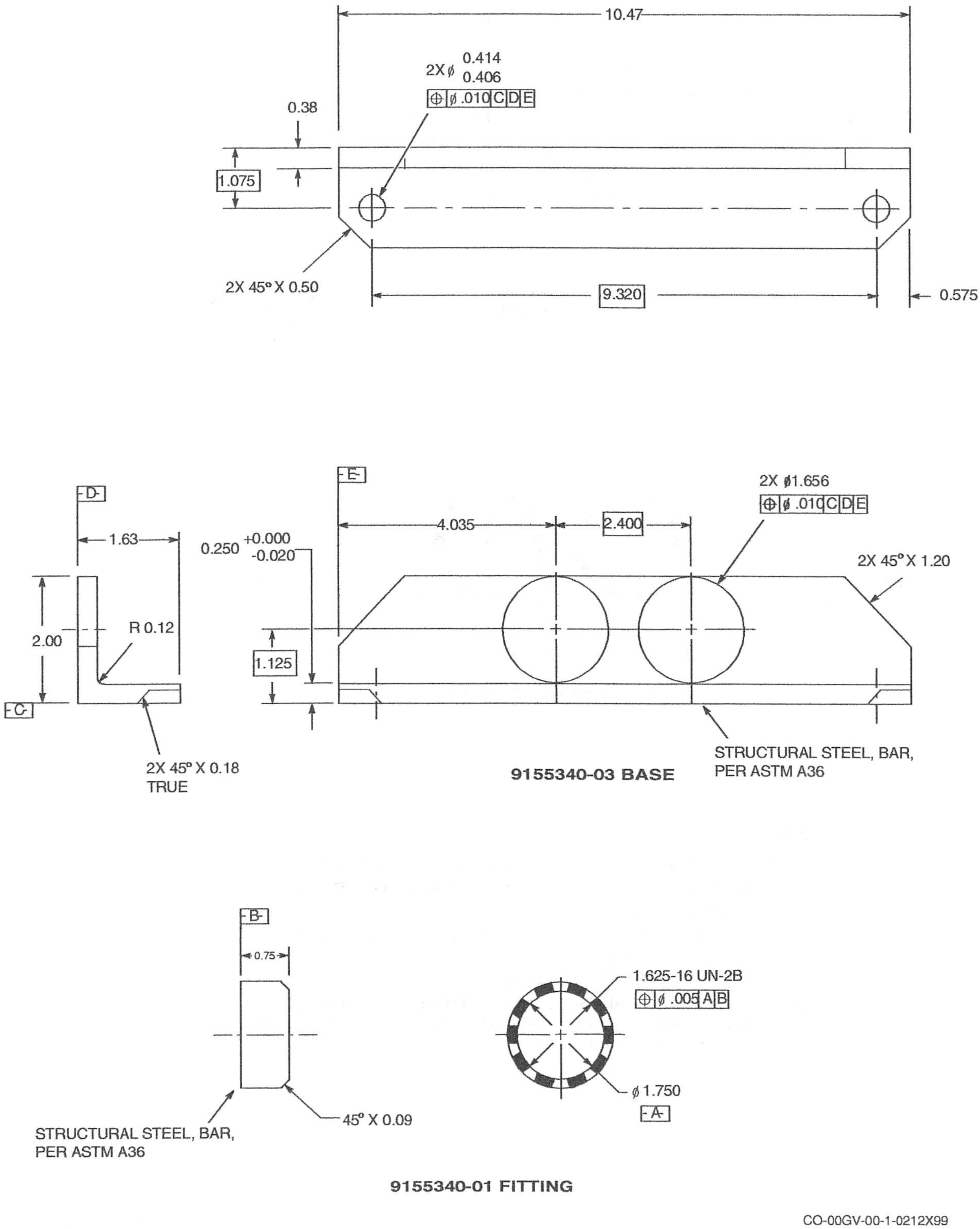
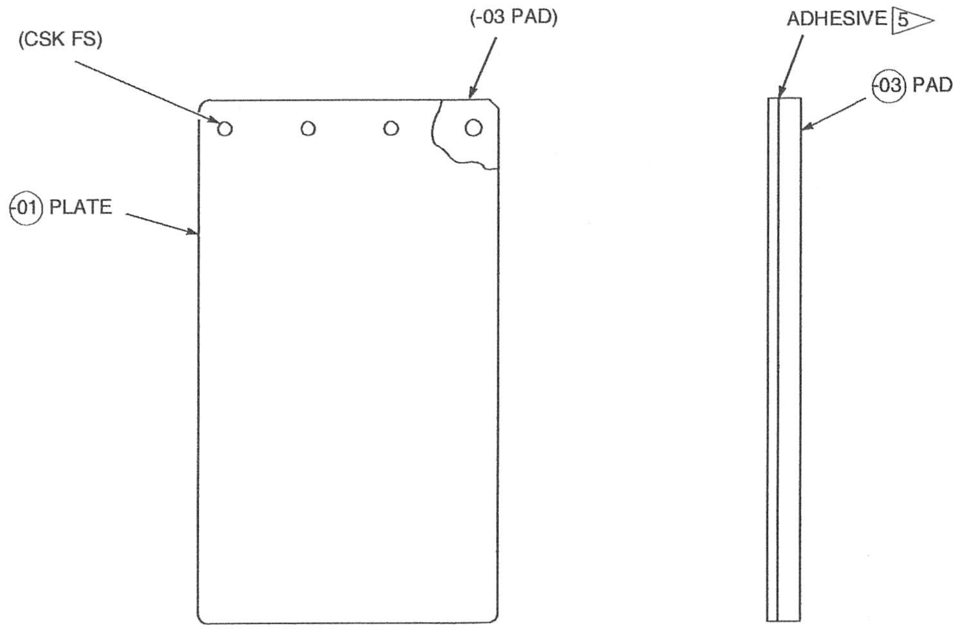


Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 7)



9155327-10 PLATE ASSY

NOTES:

1. DRAWING PREPARED IN ACCORDANCE WITH DOD-STD-100.
2. IDENTIFY WITH PART NO. IN ACCORDANCE WITH MIL-STD-130.
3. REMOVE ALL BURRS AND SHARP EDGES.
4. THE DISTRIBUTION STATEMENT WAS PREPARED IN ACCORDANCE WITH AIR FORCE REGULATION 83-3.
5. ADHESIVE PER MMM-A-1617, TYPE III.
6. FELT PER C-F-206, TYPE I, CLASSIFICATION NO. SR2 AND WEIGHT OPTIONAL.
7. ALUMINUM ALLOY, 2024, SHEET, PER QQ-A-250/4 TEMPER T4.
8. BOND -01 PLATE TO -03 PAD USING 5
9. APPLY ANODIC COATING PER MIL-A-8625 TYPE I, CLASS 1, ONE COAT PRIMER COATING PER MIL-P-85582, TYPE I, CLASS 2, FINISH WITH TWO COATS COATING, POLYURETHANE PER MIL-C-85285, TYPE II, COLOR NO. 11138, TO -01 PLATE ONLY.

CO-00GV-00-1-0213X99

Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 8)

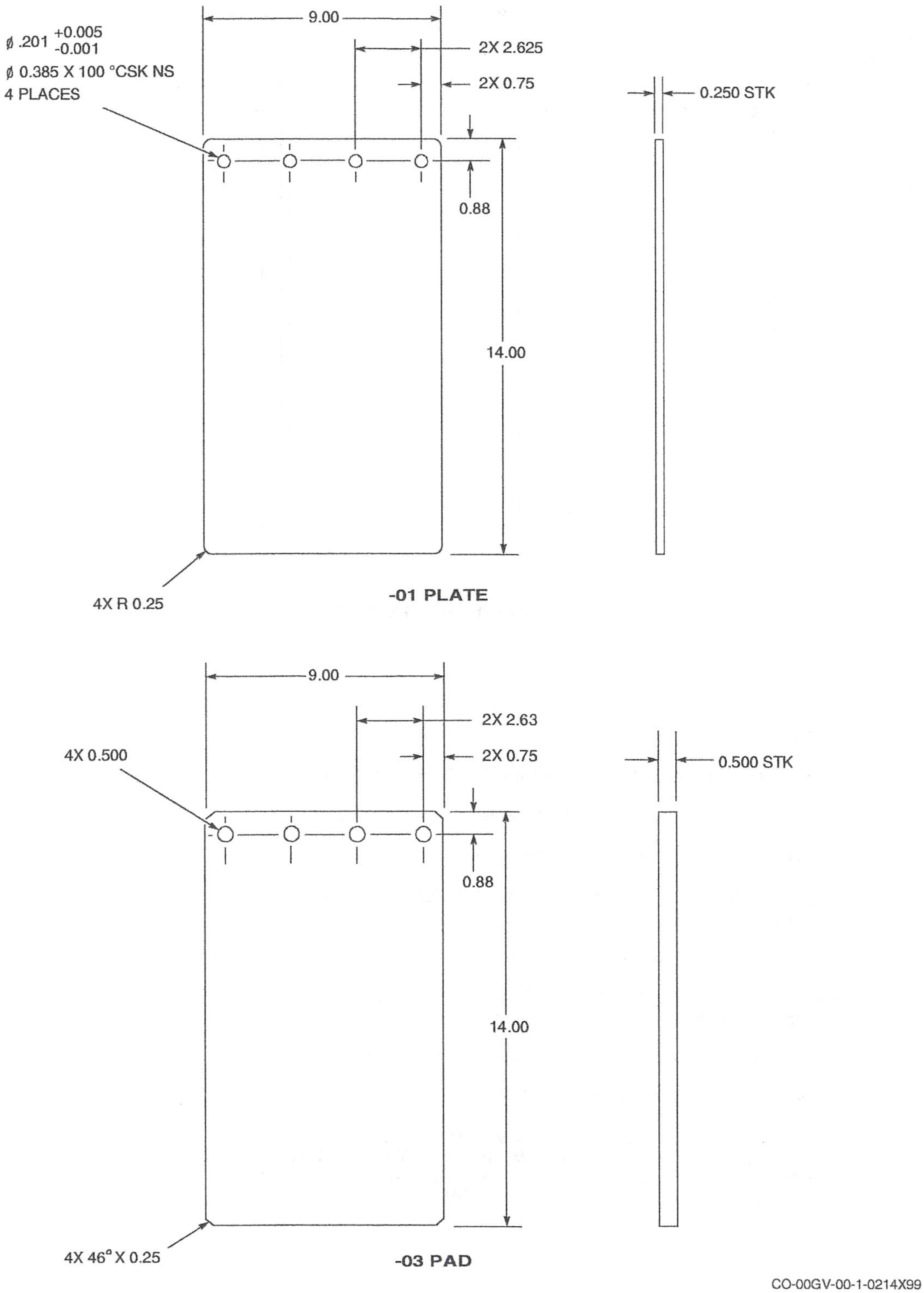


Figure 1-10. Fabrication of Tool, Extractor Bolt, Wing Attach Fitting. (Sheet 9)

CHAPTER 2

GENERAL MAINTENANCE PROCEDURES

2.1 GENERAL.

This section provides general maintenance procedures that are not suitable for job guide format and are applicable to more than one system. The section contains such information as electrical bonding requirements, torque wrench application, general adhesive, general fuel tank sealing compound, aircraft surface smoothness, etc.

2.1.1 Electrical Bonding Safety Precautions. Practically all materials, cleaners, sealants, or coating compounds used during bonding are flammable and toxic. Extreme care shall be exercised in the use of these materials. Failure to observe these safety precautions may cause serious personal injury.

a. Avoid breathing of fumes or skin contact with these materials.

b. Wear protective clothing (gloves, goggles, etc.) approved for the material being used.

c. Areas adjacent to any cleaning, sealing, or coating operation shall be well ventilated, particularly enclosed or partially enclosed areas.

d. Cleaners, sealants, and coating compounds shall be kept to a minimum.

e. Care shall be exercised to prevent spilling of materials.

f. Soiled materials or cleaning cloth shall be discarded into safety cans provided for that purpose.

2.2 ELECTRICAL BONDING REQUIREMENTS.

Electrical bonding (Figure 2-1) is required for effective control of Electromagnetic Interference (EMI) and the hazards of electrical effects. Bonding connections are installed so vibration, expansion/contraction, or relative movement incidental to normal service use will not break the bonding connections.

2.2.1 Integrity of Bond. Visual inspection of a bond joint, ground connection, or a series of bonding connections in an electrical/electronic assembly or installation (including, but not limited to, LRU to airframe ground) may detect loose hardware, corroded junctions, and broken bond jumpers and, therefore, inadequate or suspect bonds. When preparing mating surfaces for electrical bonding, if a visual inspection indicates a suspect LRU to airframe ground bond of anodic films, oxides, greases, paints, lacquers, or other highly resistant films, the bond integrity shall be verified. There are two methods for achieving the required LRU to airframe bonding. Either method is acceptable.

a. Direct measurement of the LRU to the airframe shall meet the 0.0025-ohm requirements of Table 2-1.

b. Measurement of individual mating bonds shall be made with a milliohmmeter (bonding meter) shown in Table 2-2. All bonding measurements shall be made by placing the milliohmmeter probes as close as practical to the bond joint or the connection being measured. This measurement shall be made across a single individual bond immediately adjacent to the bond across the integral bonded surface. Each individual bond shall meet the 0.0025-ohm requirement. Any individual bond not meeting this requirement shall be disassembled, cleaned, and rebonded.

The direct measurement is generally the quickest and most convenient. However, before LRU to airframe bonding may be considered inadequate, the individual bonding measurement method shall be utilized. The individual bond measurement method may be more difficult to perform due to the limited bond access on the aircraft.

2.2.1.1 If paint and/or primer removal is necessary to make a bonding measurement, the disturbed area shall be retouched. When a bonding problem is suspected and the technician determines that corrective action is warranted, the technician shall follow the surface preparation instructions in the following paragraphs as applicable. Electrical bond resistance for specific applications, such as 0.20 ohm for static dischargers to aircraft structure, is noted in Table 2-1.

2.2.2 Surface Treatment for Electrical Contact. Mating surfaces shall be cleaned of anodic films, oxides, greases, paints, lacquers, or other highly resistant films if required. Surfaces shall be cleaned by sanding and polishing with any of the following: number 7/0 garnet finishing paper, fiberglass or equivalent brushes, abrasive impregnated non-woven nylon (Scotch Brite), or unitized nylon wool. Brush clean. A second alternative, when these abrasives are not available, is No. 400-grit or finer silicon carbide paper. An acceptable equivalent for cleaning aluminum surfaces is No. 400-grit or finer aluminum oxide paper or No. 120-grit or finer aluminum oxide blast. All surfaces shall be thoroughly cleaned after use of silicon carbide material. Care shall be taken to prevent excess removal of metal. Abrasives such as emery or sandpaper, which cause corrosive action if particles are imbedded in the metal, shall not be used. Surfaces should be recleaned if bond is not made or chemical film is not applied within 8 hours.

2.2.3 Application of Corrosion Resistant Coatings. When corrosion protection is required, a chemical conversion

coating (MIL-C-5541) shall be applied in accordance with TO 1F-16A-23.

2.2.3.1 Immersion Process. The clean metal surface or surfaces shall be dipped into MIL-C-81706 chemical conversion material. Immersion time will be sufficient to produce an identifiable light, iridescent golden color (approximately 2 minutes). Undesirable excessive coating shall not be permitted. Such coating is easily identified by a deepening of the color.

2.2.3.2 Brush Process. A brush coating of chemical conversion material shall be applied to the clean electrical mating surfaces when the dipping process is impractical.

2.2.4 Integral Fuel Tanks Coating. Cadmium-plated or aluminum components installed in aircraft integral fuel tanks require a coating of corrosion preventive coating (MIL-C-27725, type II).

2.2.5 Sealing and/or Refinishing. When paint finishes have been removed to make connections, the unpainted aluminum surfaces shall be treated with a chemical conversion coating (MIL-C-5541). After chemical treatment and bonding, the chemically-treated surface shall be treated in accordance with the following paragraphs:

2.2.5.1 Integral Fuel Tanks. When fuel tank sealing is required, seal over the connection with a fillet of sealing compound (MIL-S-83430).

2.2.5.2 Pressurized Area. When sealing of pressurized areas is required, seal over the connection with a fillet of sealing compound (MIL-S-83430).

2.2.5.3 Components Within Fuel Tanks or Pressurized Areas. Where component bonding is required and the component is located entirely within a fuel tank or pressurized area and the attaching fasteners of the component do not penetrate the tank or area, sealing will not be required and the bonded area shall be touched up with the same type of primer and paint which was originally used to finish the part.

2.2.5.4 Nonfuel, Nonpressurized Areas. In nonfuel or nonpressurized locations, the area where the paint-type coating has been removed shall be touched up with the same type of primer and paint which was originally used to finish the part.

2.2.6 Preparation of Panels for Mounting Electrical and Electronic Components. Electrical and electronic components mounted on panels (excluding forward face panels in the crew compartment) located in interior enclosed areas not exposed to corrosive environment may be electrically bonded by mounting them to masked areas. Where it is possible to define the area of bonding, a maskant may be applied after chemical conversion coating (MIL-C-81706) is applied to the designated bonding area. Primer and/or topcoat shall be applied and cured prior to mounting the component. In these applications, masking shall not exceed 3/8-inch from the outer edge of each mounted component. Additional top-coating of the masked areas after bonding will not be necessary.

2.2.7 Restoration of Corrosion Protection. Where paint finishes have been removed to make connections and paint finishes are required on final assembly, the connections shall be refinished with original type finishes or matching colors.

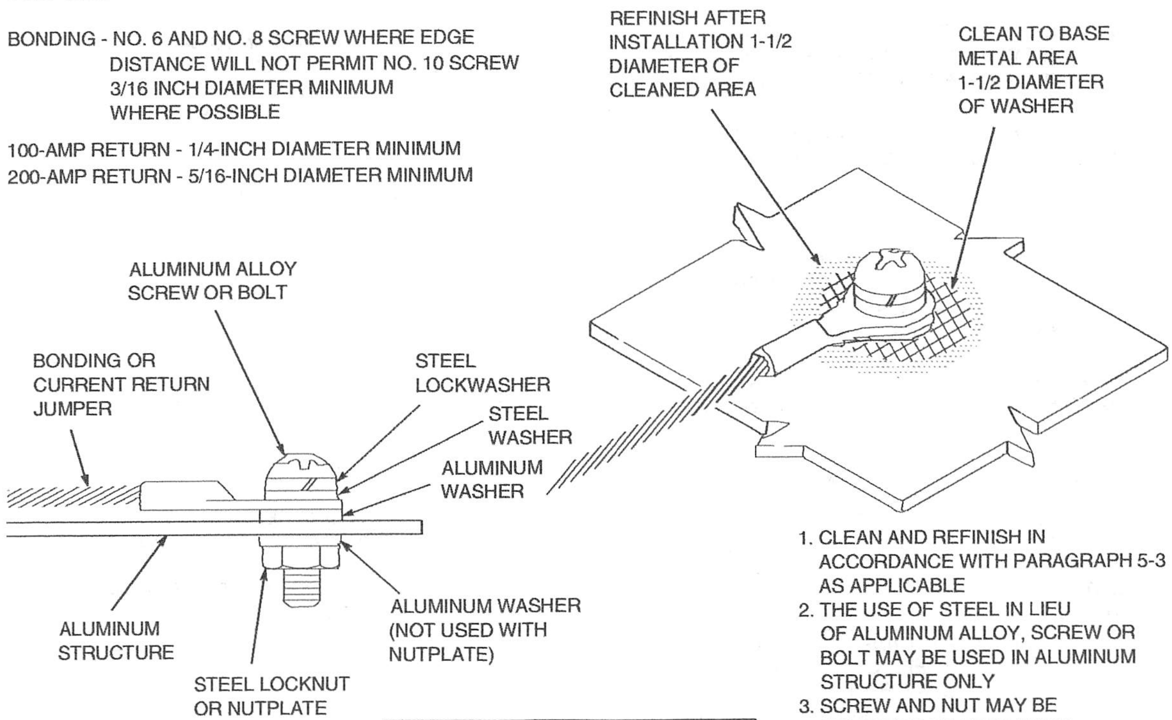
2.2.8 Parts Inherently Bonded. Inherently bonded joints of similar metals are parts normally secured together for the life of the assembly. The parts shall have the surfaces cleaned as described above and shall be permanently assembled together, prepared surface to prepared surface. The joints shall then be coated with a protective coating as required.

2.2.9 Semipermanent Joints. Connections which may be disassembled from time to time shall be cleaned as described above and the metal surfaces for electrical contact shall be coated with chemical conversion material (MIL-C-81706). The coated joint shall then be treated in accordance with the appropriate paragraphs of this section. The types of bonding connections are shown in Figure 2-1.

BOLT SIZE:

BONDING - NO. 6 AND NO. 8 SCREW WHERE EDGE DISTANCE WILL NOT PERMIT NO. 10 SCREW 3/16 INCH DIAMETER MINIMUM WHERE POSSIBLE

100-AMP RETURN - 1/4-INCH DIAMETER MINIMUM
200-AMP RETURN - 5/16-INCH DIAMETER MINIMUM



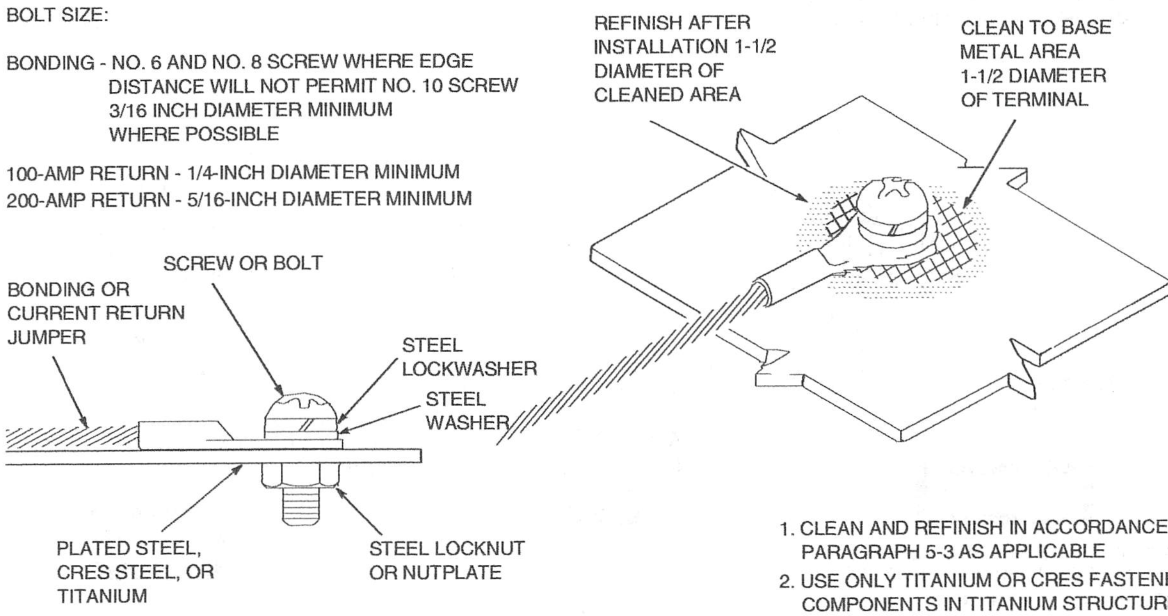
1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3 AS APPLICABLE
2. THE USE OF STEEL IN LIEU OF ALUMINUM ALLOY, SCREW OR BOLT MAY BE USED IN ALUMINUM STRUCTURE ONLY
3. SCREW AND NUT MAY BE REVERSED TO FACILITATE INSTALLATION

BOLTED CONNECTION - JUMPER TO ALUMINUM STRUCTURE

BOLT SIZE:

BONDING - NO. 6 AND NO. 8 SCREW WHERE EDGE DISTANCE WILL NOT PERMIT NO. 10 SCREW 3/16 INCH DIAMETER MINIMUM WHERE POSSIBLE

100-AMP RETURN - 1/4-INCH DIAMETER MINIMUM
200-AMP RETURN - 5/16-INCH DIAMETER MINIMUM



1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3 AS APPLICABLE
2. USE ONLY TITANIUM OR CRES FASTENER COMPONENTS IN TITANIUM STRUCTURE

BOLTED CONNECTION - JUMPER TO PLATED STEEL, CRES STEEL, OR TITANIUM

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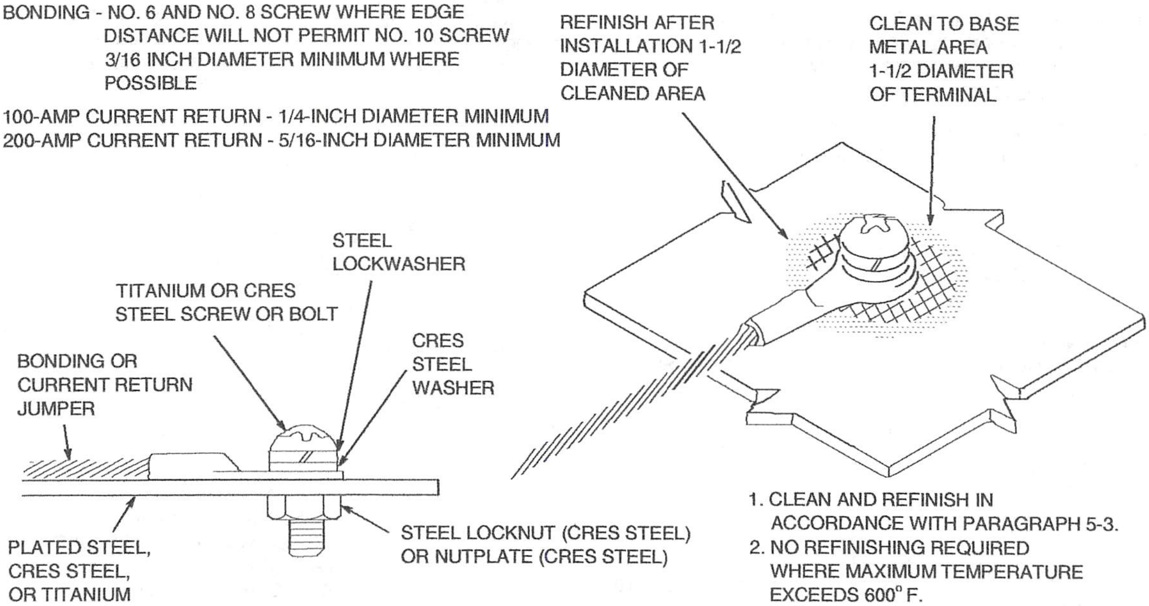
Figure 2-1. Electrical Bonding. (Sheet 1 of 11)

BOLT SIZES:

BONDING - NO. 6 AND NO. 8 SCREW WHERE EDGE DISTANCE WILL NOT PERMIT NO. 10 SCREW 3/16 INCH DIAMETER MINIMUM WHERE POSSIBLE

100-AMP CURRENT RETURN - 1/4-INCH DIAMETER MINIMUM

200-AMP CURRENT RETURN - 5/16-INCH DIAMETER MINIMUM

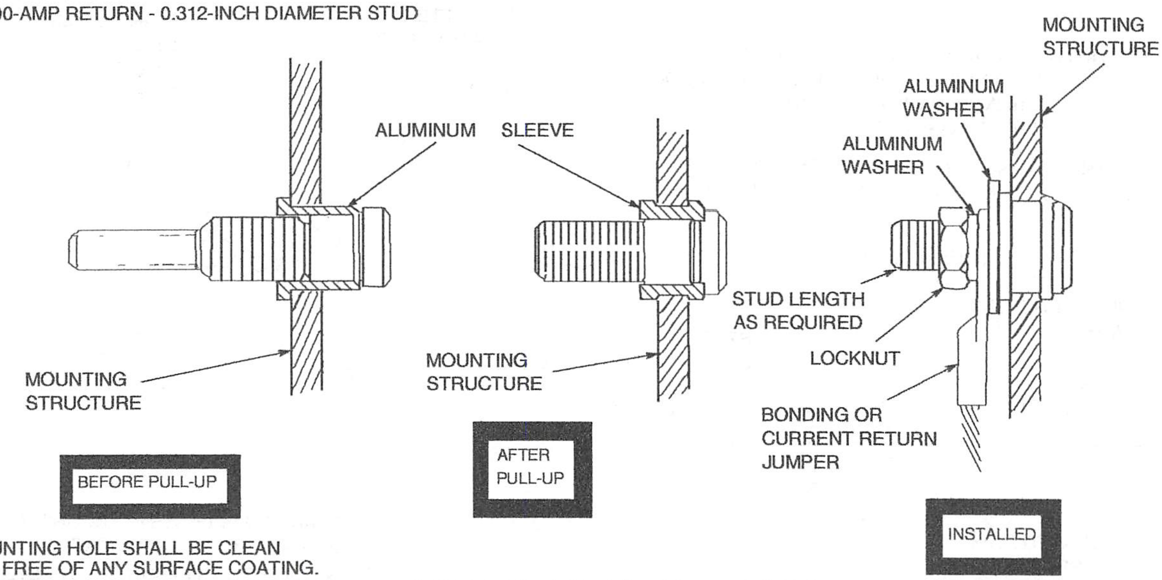


1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3.
2. NO REFINISHING REQUIRED WHERE MAXIMUM TEMPERATURE EXCEEDS 600° F.

BOLTED CONNECTION - JUMPER TO PLATED STEEL CRES STEEL, OR TITANIUM, WHERE TEMPERATURE EXCEEDS 300°F

STUD SIZE:

BONDING - 0.190-INCH DIAMETER STUD
100-AMP RETURN - 0.250-INCH DIAMETER STUD
200-AMP RETURN - 0.312-INCH DIAMETER STUD



1. MOUNTING HOLE SHALL BE CLEAN AND FREE OF ANY SURFACE COATING.
2. NO REFINISHING REQUIRED.
3. IF A M83454/( ) BLIND PLATE SHOULD BE DAMAGED OR BECOME LOOSE, REPLACE WITH A BOLT, NUT, AND GROUND CONNECTION.

BOLTED CONNECTION - M83454/( ) BLIND PLATE STUD TERMINALS

CO-00GV-00-1-0234X99

Figure 2-1. Electrical Bonding. (Sheet 2)

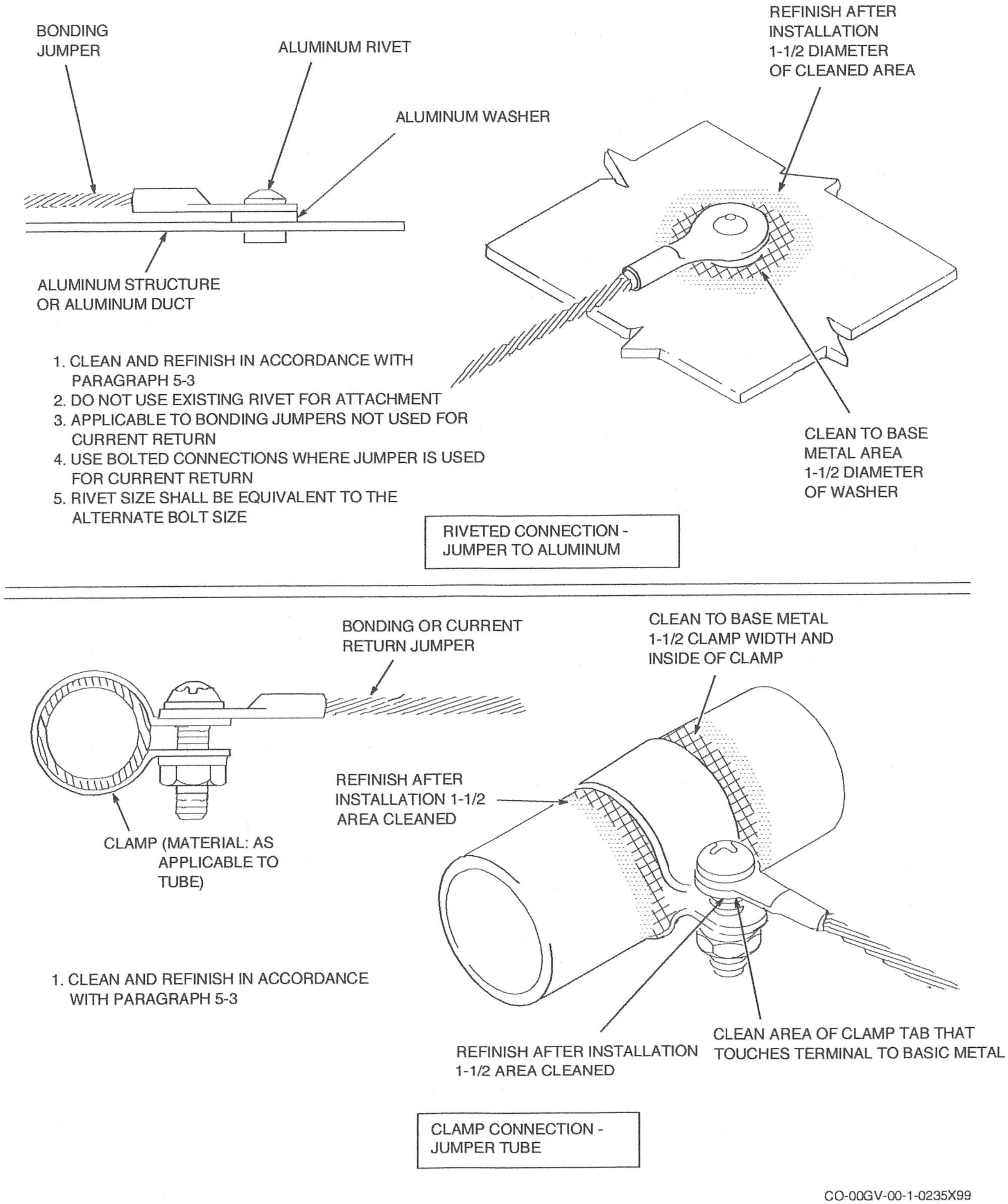


Figure 2-1. Electrical Bonding. (Sheet 3)

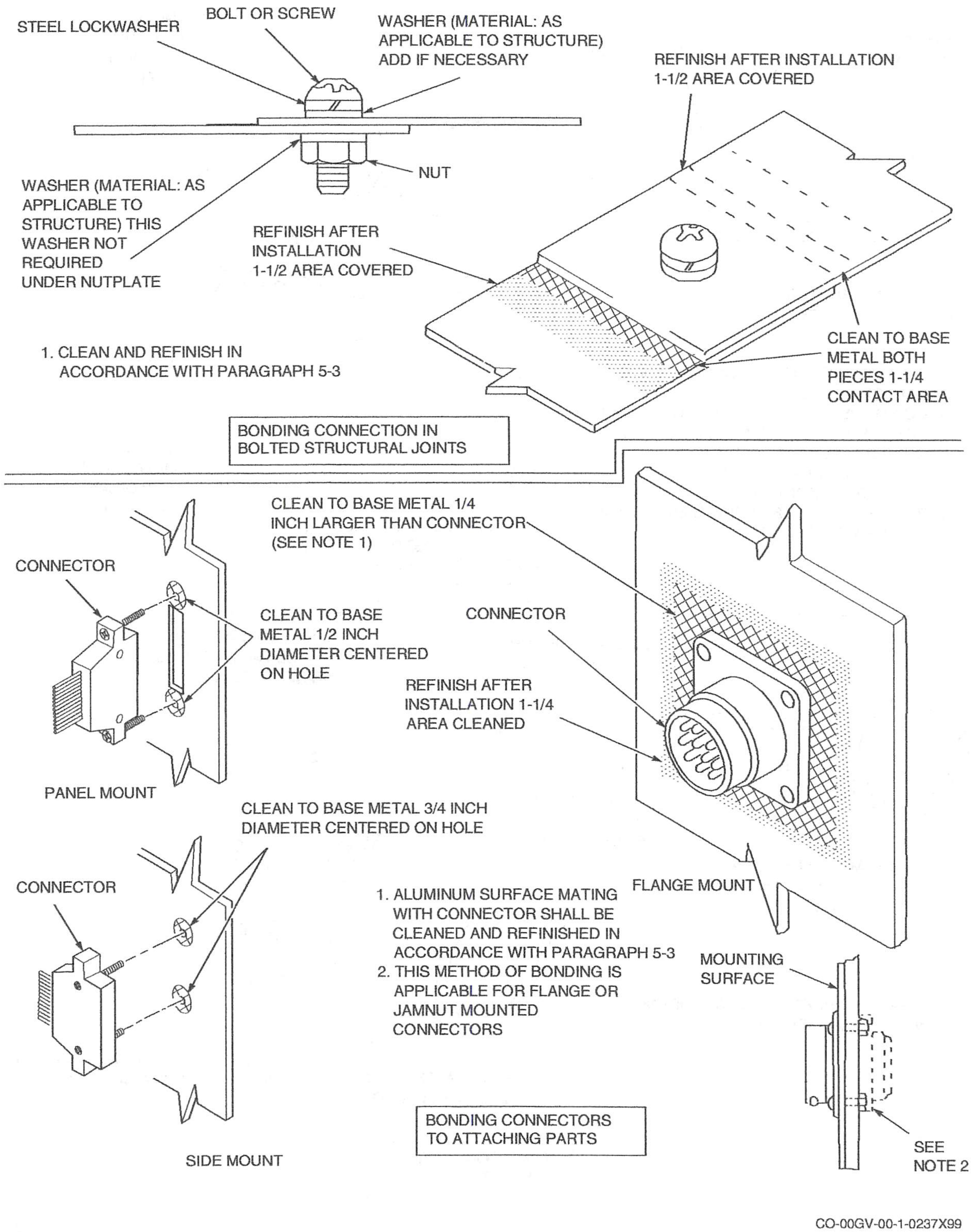
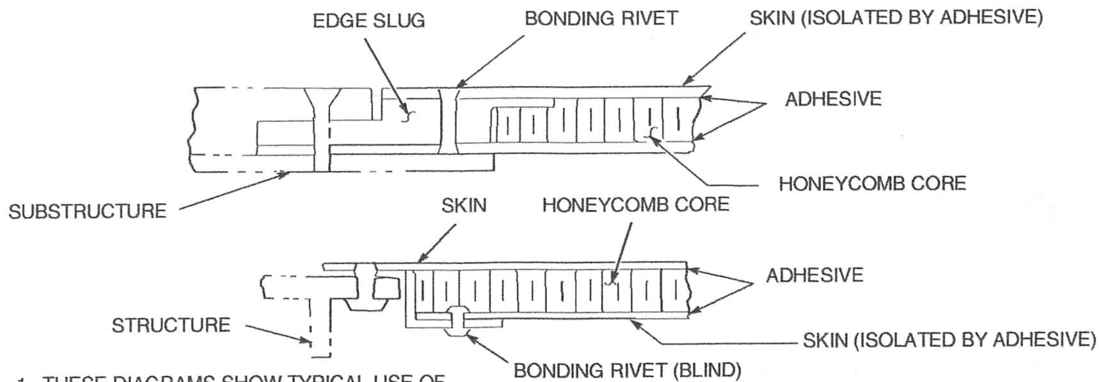
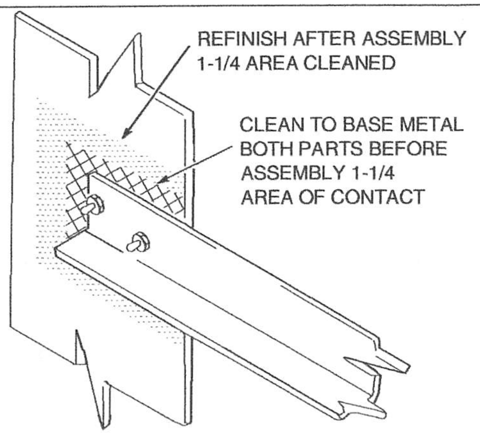


Figure 2-1. Electrical Bonding. (Sheet 4)



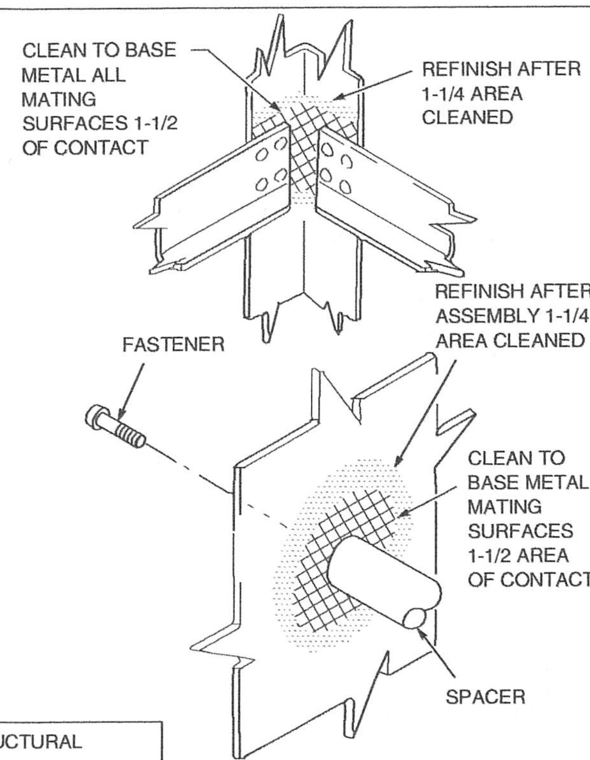
1. THESE DIAGRAMS SHOW TYPICAL USE OF RIVETS FOR BONDING OF ADHESIVE ISOLATED DETAILS. JOINTS SUCH AS THESE SHALL BE TREATED AS INDIVIDUAL CASES.
2. USE A MINIMUM OF TWO RIVETS (TOTAL AREA ELECTRICALLY EQUIVALENT TO TWO 1/8 INCH DIAMETER RIVETS) FOR ANY ONE CONNECTION. THE TOTAL NUMBER OF RIVETS AND RIVET SPACING SHALL BE AS ORIGINALLY INSTALLED.
3. ALL RIVET HOLES SHALL BE DRILLED AND RIVETS INSTALLED AFTER ADHESIVES ARE CURED
4. METAL DETAILS WHICH ARE COMPLETELY SHIELDED BY OTHER METAL PARTS WILL NOT REQUIRE BONDING
5. ASSEMBLIES ISOLATED BY NONCONDUCTING FAYING STRIPS ARE TO BE BONDED TO THE SUBSTRUCTURE WITH RIVETS OR STEEL BOLTS.

BONDING OF DETAILS WHICH ARE ELECTRICALLY ISOLATED BY ADHESIVES



CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3

METHOD OF BONDING THROUGH BOLT CONNECTION



1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3
2. CLEAN BONDING SURFACE OF SPACER IN ACCORDANCE WITH PARAGRAPH 5-3

METHOD OF BONDING BETWEEN STRUCTURAL PARTS IN AN ASSEMBLY

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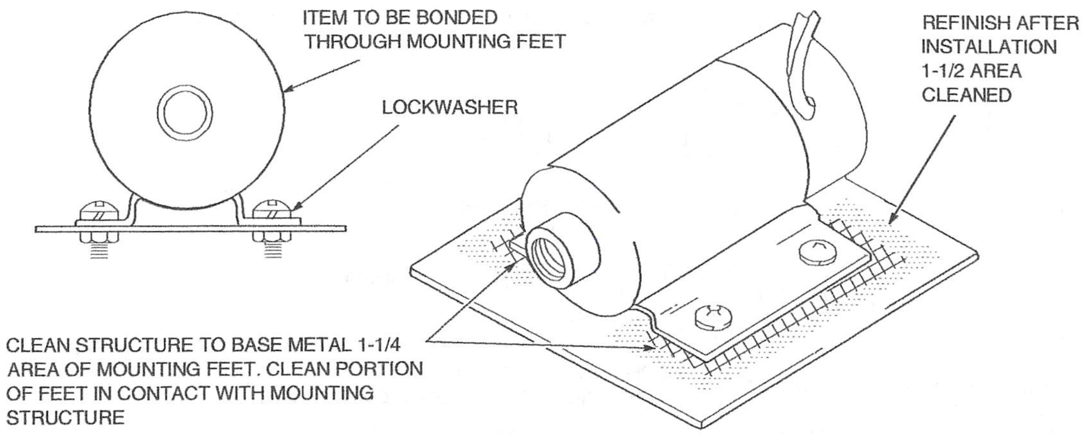
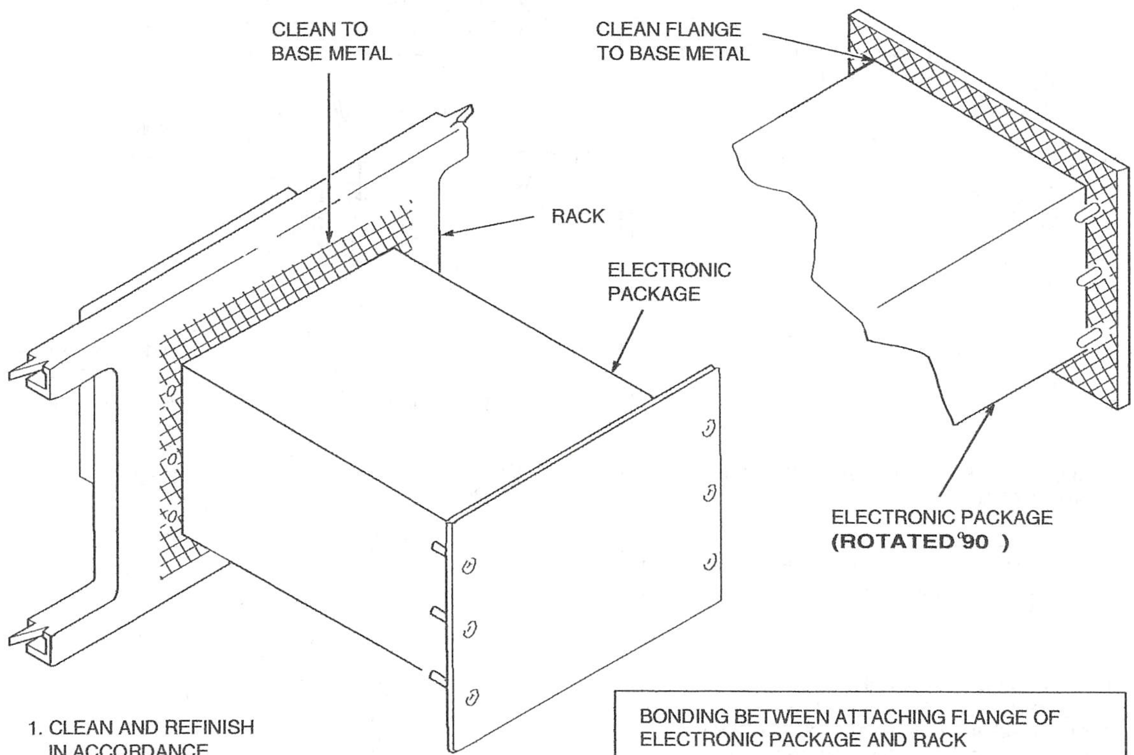
Figure 2-1. Electrical Bonding. (Sheet 5)



1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3
2. ON ITEMS THAT HAVE THE BOLTS SPACED MORE THAN 6 INCHES APART, IT IS ONLY NECESSARY TO CLEAN THE AREA 1 INCH ON EACH SIDE OF THE ATTACHING BOLTS OR SCREWS

BONDING OF EQUIPMENT WITH MOUNTING FEET INSTALLED DIRECTLY TO AIRCRAFT STRUCTURE



1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3

BONDING BETWEEN ATTACHING FLANGE OF ELECTRONIC PACKAGE AND RACK

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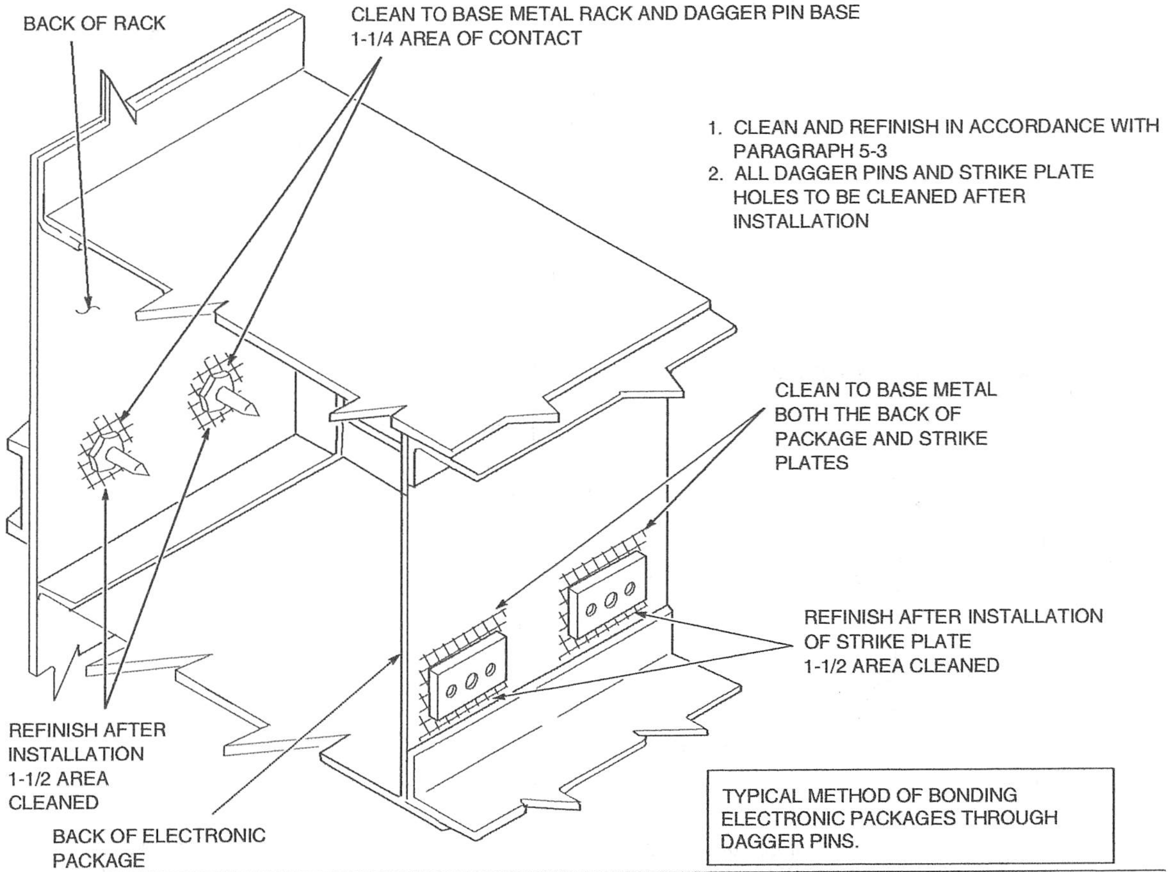
Figure 2-1. Electrical Bonding. (Sheet 6)



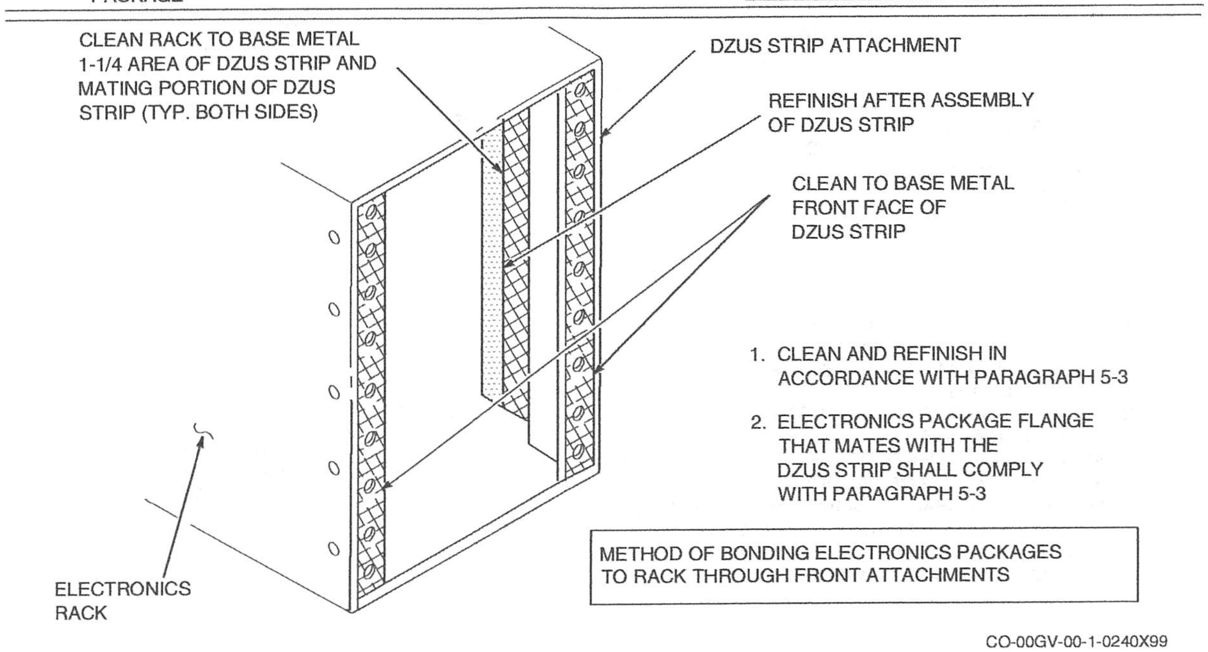
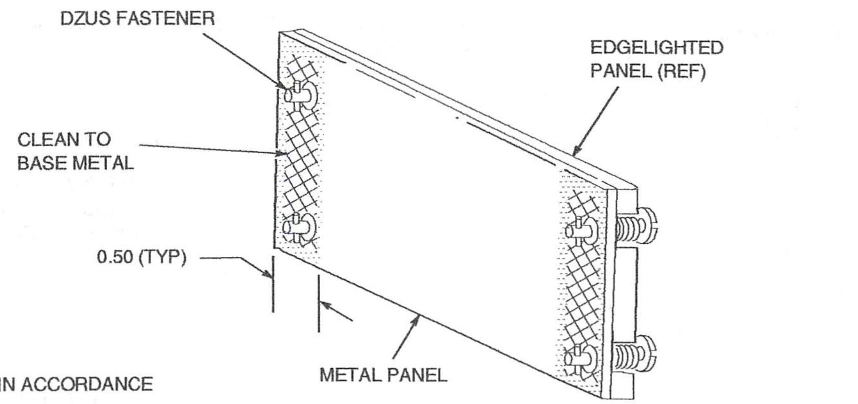
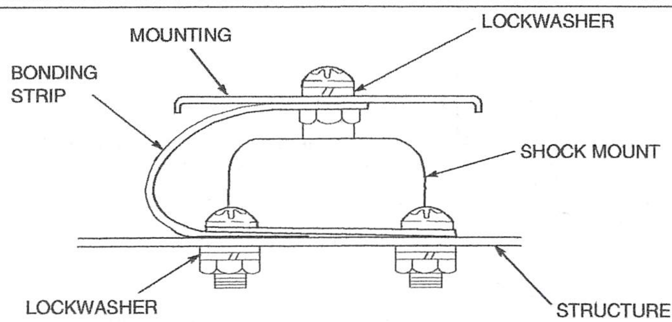


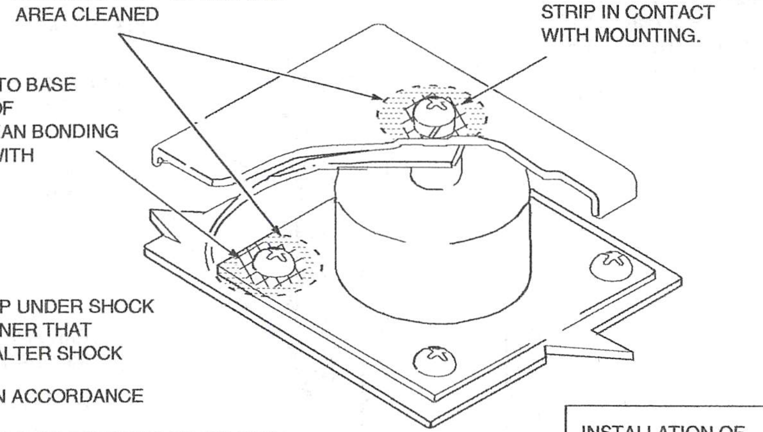
Figure 2-1. Electrical Bonding. (Sheet 7)



1. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3

METHOD OF BONDING EDGELIGHTED PANELS





1. INSTALL BONDING STRIP UNDER SHOCK MOUNT IN SUCH A MANNER THAT THE STRIP DOES NOT ALTER SHOCK MOUNT FUNCTION.
2. CLEAN AND REFINISH IN ACCORDANCE WITH PARAGRAPH 5-3
3. ALL RIVETED ELEMENTS OF THE SHOCK MOUNT SHALL BOND. IF ELEMENTS OF THE MOUNT DO NOT BOND, SHOCK MOUNT SHALL BE DISASSEMBLED. BONDED IN ACCORDANCE WITH FIGURE 5-1 (METHOD OF BONDING BETWEEN STRUCTURAL PARTS IN AN ASSEMBLY) AND REASSEMBLED.

INSTALLATION OF BONDING STRIPS ON SHOCK MOUNTS

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Figure 2-1. Electrical Bonding. (Sheet 8)

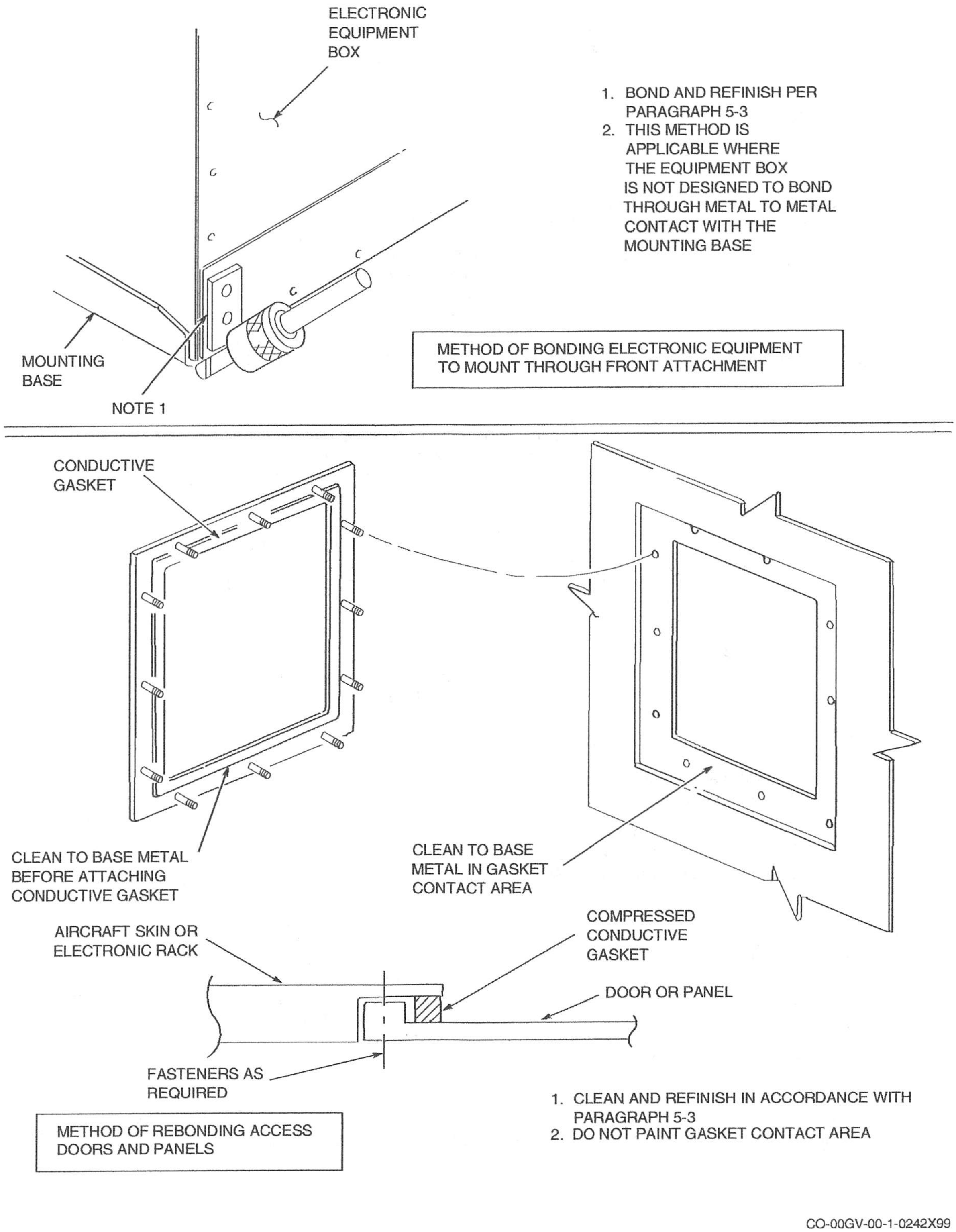
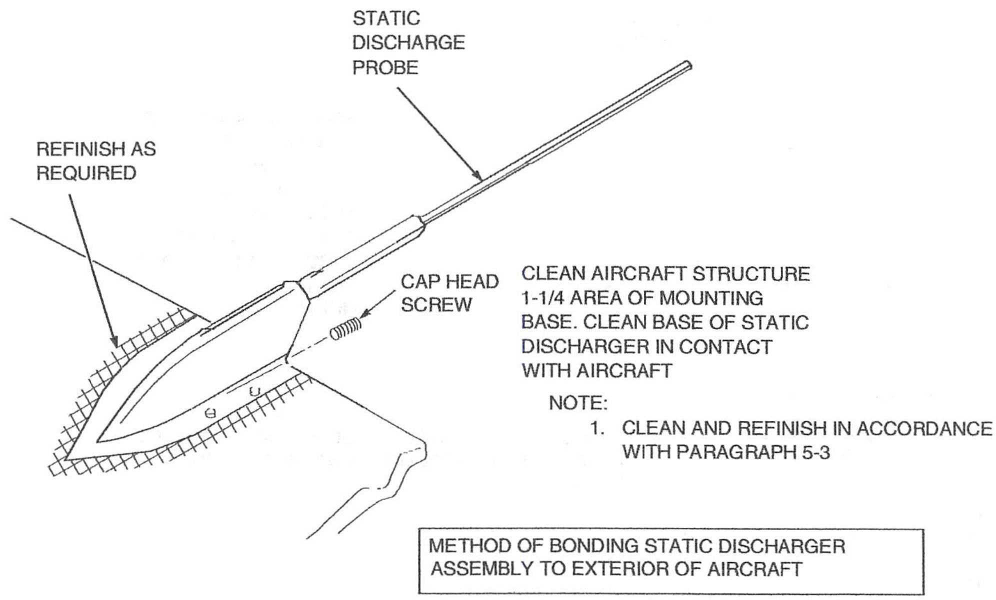
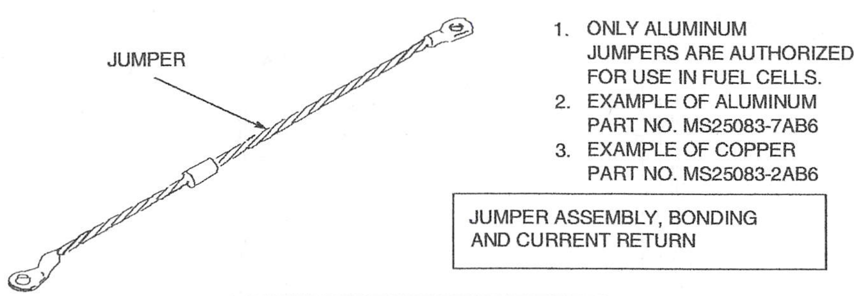


Figure 2-1. Electrical Bonding. (Sheet 9)





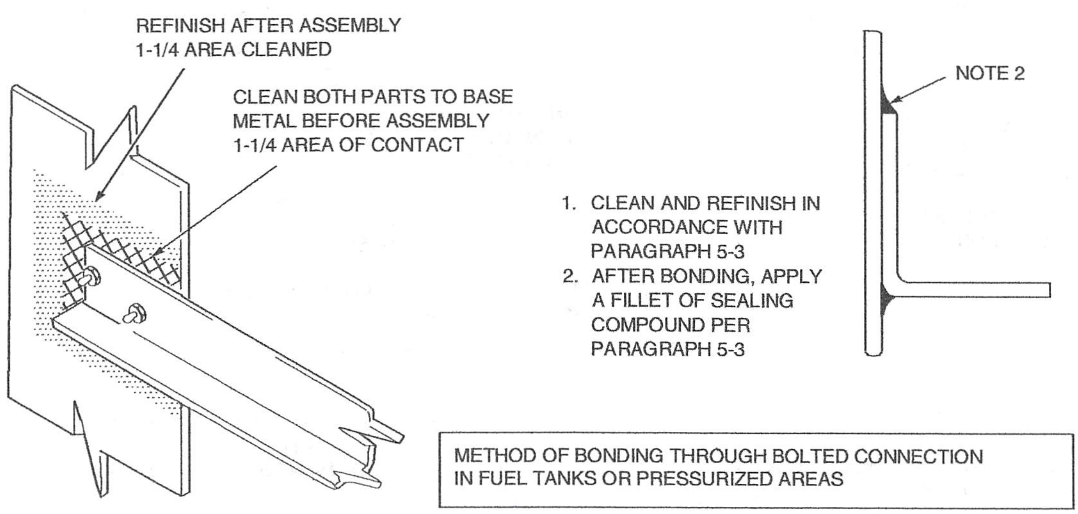


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Figure 2-1. Electrical Bonding. (Sheet 10)

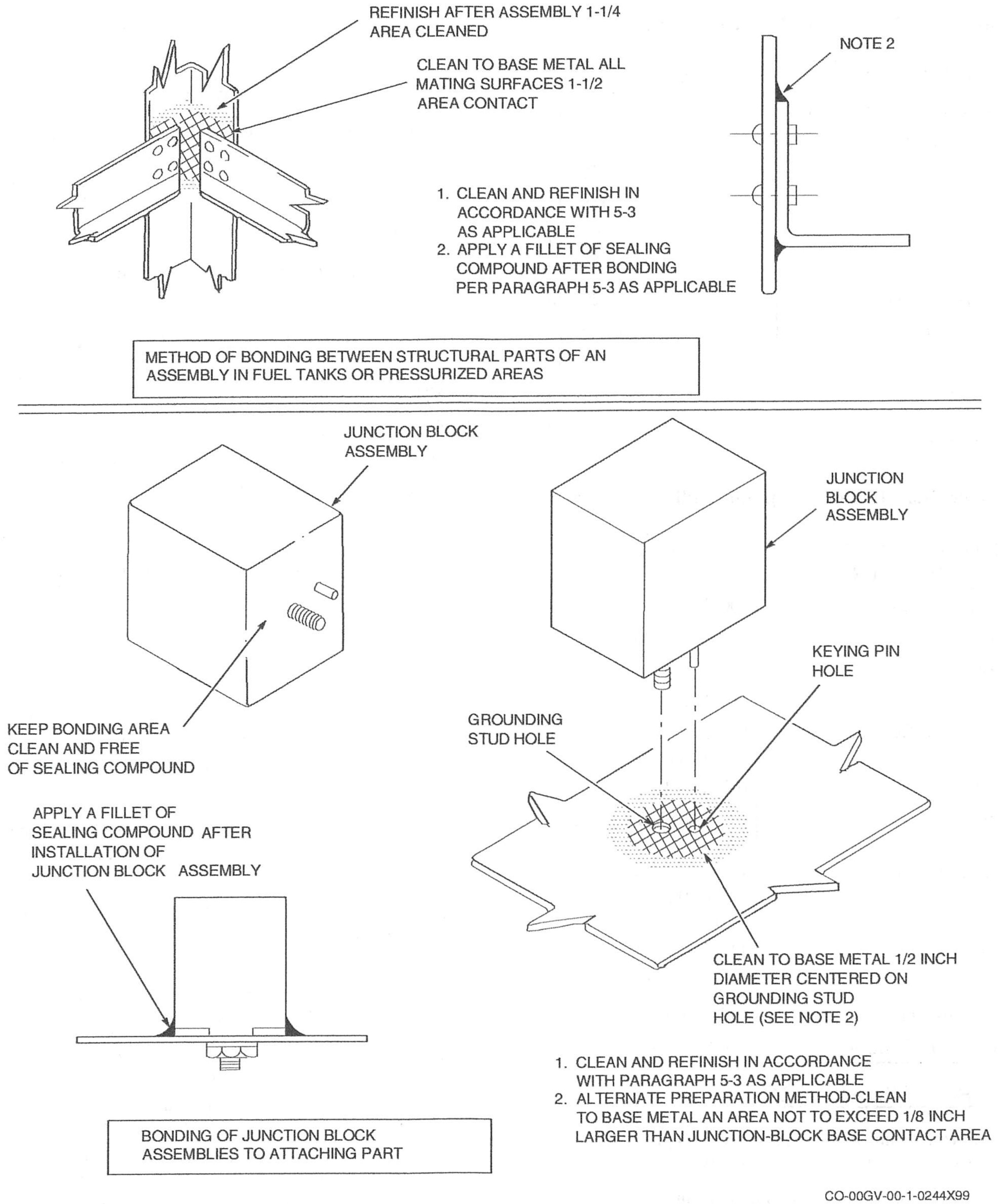

Figure 2-1. Electrical Bonding. (Sheet 11)

Table 2-1. Maximum Electrical Bond Resistance.

APPLICATION	RESISTANCE
General Bond Requirements	0.0025 ohm
Antenna Installation	0.0025 ohm
RF Potentials	0.0025 ohm
Shock Hazard	0.0025 ohm
Circuit Breakers	0.50 ohm
Static Charge	0.50 ohm
Static Dischargers	0.20 ohm
Current Returns	0.0025 ohm
Hydraulic Lines	1.0 ohm
Fuel Lines	1.0 ohm
Air Ducts	1.0 ohm

Table 2-2. List of Acceptable Milliohmmeters.

MILLIOHMMETER MANUFACTURER	MODEL(S)
Associated Research	1001D
Biddle	DLRO 247000
Daytron	1061A
Ducter	D0007/D201
Electro Scientific Ind.	1700/1701/1705 with SP 2523 Probes
LMTAS	16MTE42123
Guerpillon	498A/498M/Digitohm 1998
Gossen-Metrawatt	MetraHit 17 (M217A) with 5060E Transcat Probes
Hewlett Packard	4328A/4338A
Hioki	3220
Keithley Instrument	192/195/580
Shallcross or Shalltronix	670A/673D

2.3 O-RING INSTALLATION.

a. O-rings shall be controlled by the applicable age control requirements for the specific O-ring.

b. Check for correct size and part number.

c. O-rings from other than sealed packages shall not be used.

d. Visually inspect O-rings for cuts, nicks, or flaws before installation. Extension, cut ting, or stretching shall not be allowed.

WARNING

Hydraulic fluid and pneumatic grease are flammable and toxic. Avoid eye and skin contact and prolonged breathing of vapors. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

e. Lubricate O-ring sparingly with the correct lubricant. (See Table 2-3.)

Table 2-3. O-Ring Lubricant.

SYSTEM	O-RING LUBRICANT
Fuel	VV-P-236
Hydraulic	MIL-H-83282 or MIL-H-5606
Pneumatic	MIL-G-4343
Airspeed	MIL-G-4343

f. Cleanliness of O-ring, lubricant, lubricant application, O-ring groove, mating parts, and installing tools is essential.

g. O-ring shall not be scratched on threads or sharp corners during installation.

h. O-ring shall be carefully rolled over threads and not installed with a screwing action.

i. Do not install the O-ring in a pinched or twisted condition.

j. The O-ring groove surfaces and edges shall be free of all machine irregularities, i.e., scratches, nicks, burrs, etc.

k. Extreme caution shall be used in the removal of O-rings not to mar or scratch the surface or edge of the O-ring groove.

l. Fittings shall fit metal-to-metal in parts, with no extrusion of the O-ring permitted.

m. Rejected, damaged, and used O-rings shall be destroyed to prevent reuse.

2.4 TORQUE WRENCH APPLICATION.

a. When tightening fasteners (nuts, bolts, screws, fluid and pneumatic fittings, etc.), it is important to use antiseize compound (MIL-T-5544) and the proper torque to insure adequate tightening without overstressing the fastener. The requirement to torque fasteners using a calibrated torque wrench is indicated by including a specific torque value in the applicable maintenance step of the job guide procedure. If the

specific torque value is not provided in the step, the fastener should be torqued in accordance with Figure 2-2. Refer to Table 2-9 for C spec to vendor part number conversion. These torque values shall be followed when a special torque is not specified in the particular procedure being performed. Torque values which are given prevent damage by excessive tightening of bolts and fittings or by leaving the bolts or fittings too loose.

b. When adapters are used on torque wrenches, the difference in mechanical advantage shall be considered in determining the dial reading or torque wrench setting which will give the desired torque on the part being tightened. The following procedure is used to determine the dial reading or torque wrench setting to achieve desired torque when a torque wrench adapter is attached in line.

$$\text{Torque Wrench Setting (or Value Read on Wrench)} = \frac{\text{Torque Desired on Nut} \times \text{Length of Wrench}}{\text{Length of Wrench} + \text{Effective Length of Adapter}}$$

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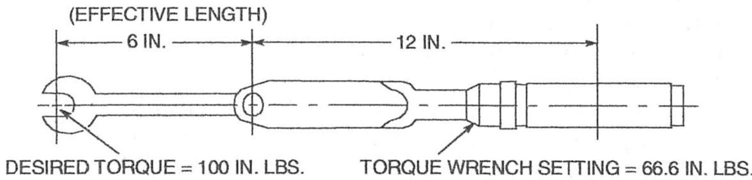
c. Whenever possible, attach the adapter in line with the torque wrench as shown in example A of Figure 2-2. When necessary to attach the adapter at an angle to the torque wrench, the effective length of the torque wrench will be reduced as shown in example B of Figure 2-2 or become a minus length as shown in example C of Figure 2-2. When a torque setting calculates out to a decimal or fraction, set torque wrench to the nearest practical value. For instance, in example A, use 65 to 70 inch-pounds; in example B, use 65 to 70 inch-pounds; and in example C, use 180 to 185 inch-pounds.

TORQUE WRENCH WITH
ADAPTER ATTACHED
IN LINE

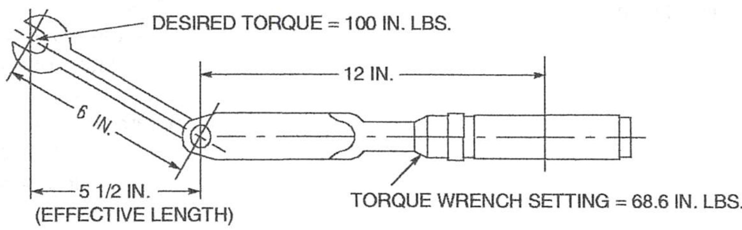


EXAMPLE PROBLEM "A":

1. FIND TORQUE WRENCH SETTING TO APPLY 100 IN. LBS. ON NUT, BOLT, OR FITTING.
2. GIVEN: a. TORQUE WRENCH LENGTH = 12 IN.
   b. ADAPTER EFFECTIVE LENGTH = 6 IN.

$$\text{TORQUE WRENCH SETTING} = \frac{\text{TORQUE ON NUT} \times \text{LENGTH OF WRENCH}}{\text{LENGTH OF WRENCH} + \text{EFFECTIVE LENGTH OF ADAPTER}} = \frac{100 \text{ IN. LBS.} \times 12 \text{ IN.}}{12 \text{ IN.} + 6 \text{ IN.}} = \frac{100 \times 12}{18} = 66.6 \text{ IN. LBS.}$$

TORQUE WRENCH WITH
ADAPTER ATTACHED
AT AN ANGLE

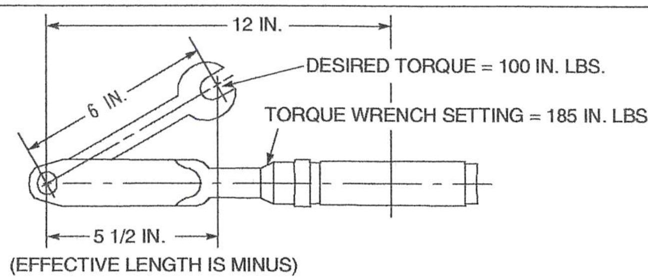


EXAMPLE PROBLEM "B":

1. FIND TORQUE WRENCH SETTING TO APPLY 100 IN. LBS. ON NUT, BOLT, OR FITTING.
2. GIVEN: a. TORQUE WRENCH LENGTH = 12 IN.
   b. ADAPTER EFFECTIVE LENGTH = 5 1/2 IN.

$$\text{TORQUE WRENCH SETTING} = \frac{\text{TORQUE ON NUT} \times \text{LENGTH OF WRENCH}}{\text{LENGTH OF WRENCH} + \text{EFFECTIVE LENGTH OF ADAPTER}} = \frac{100 \text{ IN. LBS.} \times 12 \text{ IN.}}{12 \text{ IN.} + 5\ 1/2 \text{ IN.}} = \frac{100 \times 12}{17\ 1/2} = 68.6 \text{ IN. LBS.}$$

TORQUE WRENCH WITH
ADAPTER ATTACHED
AT A REVERSE ANGLE



EXAMPLE PROBLEM "C":

1. FIND TORQUE WRENCH SETTING TO APPLY 100 IN. LBS. ON NUT, BOLT, OR FITTING.
2. GIVEN: a. TORQUE WRENCH LENGTH = 12 IN.
   b. ADAPTER EFFECTIVE LENGTH = 5 1/2 IN.

$$\text{TORQUE WRENCH SETTING} = \frac{\text{TORQUE ON NUT} \times \text{LENGTH OF WRENCH}}{\text{LENGTH OF WRENCH} + \text{EFFECTIVE LENGTH OF ADAPTER}} = \frac{100 \text{ IN. LBS.} \times 12 \text{ IN.}}{12 \text{ IN.} + (-5\ 1/2)} = \frac{100 \times 12}{6\ 1/2} = 185 \text{ IN. LBS.}$$

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Figure 2-2. Torque Wrench Application and Values.

Table 2-4. Torque Wrench Application and Values.

FASTENER TYPES	A	B	C	D
SHEARPINS	NAS4450 NAS4452	C9570	— — —	— — —
HEX HEAD BOLTS	NAS1801 AN3 THRU AN10	NAS563 THRU 572 NAS673 THRU 675 NAS1303 THRU 1320	— — —	— — —
	NAS1096	NAS6203 THRU 6220 NAS6303 THRU 6320 NAS6403 THRU 6420		
100 DEG CSK BOLTS AND SCREWS	NAS1102 NAS1580 NAS1189 NAS1581	C7984 C7985 (FOR TORQUE VALUES SEE Table 2-5)	— — —	
	MS21093 NAS5514 MS24693	C7986 C9535		
SPLINE DRIVE BOLTS	— — —	C7521 MS21297 C9851		MS21296
PROTRUDING HEAD BOLTS AND SCREWS	NAS1101 NAS1351 NAS1190 NAS1352 NAS1578 MS35206 MS27039 MS35207 MS51957 MS35214 MS51958			

THREAD SIZE	WRENCH TORQUE (INCH POUNDS)			
	A	B	C	D
0.1640-32	20(±3)	30(±5)		— — —
0.1900-32	30(±5)	50(±10)		70(±10)
0.2500-28	50(±10)	125(±15)		150(±15)
0.3125-24	125(±15)	220(±20)		300(±20)
0.3750-24	220(±20)	360(±40)		500(±25)
0.4375-20	360(±40)	600(±50)		700(±50)

Table 2-4. Torque Wrench Application and Values - Continued.

FASTENER TYPES	A	B	C	D
0.5000-20	600(±50)	900(±75)		1200(±75)
0.5625-18	900(±75)	1300(±100)		1600(±100)
0.6250-18	1300(±100)	1800(±125)		2200(±125)
0.7500-16	— — —	3025(±200)		4000(±250)
0.8750-14	— — —	4865(±300)		5800(±300)
1.0000-12	— — —	7240(±450)		8500(±500)
1.1250-12	— — —	10500(±600)		— — —
1.2500-12	— — —	14000(±800)		— — —
1	Torque values shown above are in inch-pounds. (To convert to foot-pounds, divide by 12.)			
2	For fasteners not listed in this figure, use column A torque values unless specific technical order otherwise directs.			
3	Verify type of receptacle prior to torque to achieve correct torque.			
4	Self-retained fasteners C9537 sizes 1/4- to 3/8-inch shall be torqued as required to fair-in panel with adjacent structure not to exceed 90 in. lb.			

Table 2-5. Torque Wrench Application and Values.

TORQUE VALUES FOR C7985	
THREAD SIZE	WRENCH TORQUE (INCH-POUNDS)
0.1900-3	40(±10)
0.2500-28	60(±10)
0.3125-24	155(±20)
0.3750-24	250(±30)
0.4375-20	480(±50)
0.5000-20	825(±20)
0.5625-18	1200(±100)
0.6250-18	1600(±100)

Table 2-6. Torque Wrench Application and Values.

TORQUE VALUES FOR SELF LOCKING NUTS USED ON NAS4450 AND NAS4452 PINS		
NOMINAL FASTENER DIAMETER	NUT PART NO.	TORQUE (INCH POUNDS)
5/32	MS21042L08	20-30

Table 2-6. Torque Wrench Application and Values - Continued.

3/16	NAS1726( )3( ) MS21042L3 C9597-2-6	35-50
1/4	NAS1726( )4( ) MS21042L4 C9597-2-8	80-100
5/16	NAS1726( )5( ) MS21042L5 C9597-2-10	145-200
3/8	NAS1726( )6( ) MS21042L6 C9597-2-12	240-300

Table 2-7. Torque Wrench Application and Values.

TORQUE VALUES FOR FASTENERS INSTALLED IN NAS1734 OR NAS1735 PRESS NUTS		
	WRENCH TORQUE (INCH-POUNDS)	
FASTENER THREAD SIZE	AL[1]	STL, T1, GRAPHITE[1]
0.1900-32	35 (±5)	45 (±10)
0.2500-28	60 (±10)	110 (±15)
0.3125-24	120 (±20)	180 (±20)
0.3750-24	250 (±25)	375 (±50)
0.4375-20	525 (±50)	600 (±50)
0.5000-20	710 (±50)	800 (±50)
0.5625-18	1000 (±100)	1100 (±100)
0.6250-18	1500 (±100)	1650 (±100)
0.7500-16	3000 (±300)	3000 (±300)

1 NAS1734 or NAS1735 press nuts installed in specified material.

Table 2-8. Torque Wrench Application and Values.

TORQUE VALUES FOR FASTENERS INSTALLED IN ELECTRICAL ATTACHMENTS			
	TORQUE (INCH-POUNDS)		
FASTENER THREAD SIZE	NUTS		SCREWS WRENCHING FROM HEAD
	PLAIN	SELF-LOCKING	
0.086-56 0.086-64	1.5 to 3.0	3 to 4	1.5 to 2.5
0.112-40 0.112-48	4.0 to 6.0	6 to 8	4.0 to 6.0
0.138-32 0.138-40	6.0 to 9.0	12 to 15	6.0 to 8.0
0.164-32 0.164-36	8.0 to 12.0	15 to 20	8.0 to 12.0
0.190-24 0.190-32	15.0 to 20.0	20 to 25	15.0 to 20.0
0.250-20 0.250-28	30.0 to 45.0	35 to 50	30.0 to 45.0

Table 2-9. Conversion from C Spec Control Number to MFG Part Number.

SPEC CONTROL	MFG PART NUMBER	MFG CODE
100 Deg CSK Bolts and Screws		
C7984	VT1693	(92215) (06950)
	AIC984	(06725)
	121557	(80539)
	PBF1165	(27624)
	H044	(97928)
C7985	VT1694	(92215) (06950)
	AIC985	(06725)
	121558	(80539)
	PBF1166	(27624)
	H185	(97928)
C7986	AIC986	(06725)
	121711	(80539)
	VT1695	(92215) (06950)
	PBF1196	(27624)
	H168	(97928)

Table 2-9. Conversion from C Spec Control Number to MFG Part Number - Continued.

SPEC CONTROL	MFG PART NUMBER	MFG CODE
C9535	AIC9535	(06725)
	VT1696	(92215) (06950)
	121754	(80539)
	SC1776	(06950)
	PBF1198	(27624)
Bolt to Lead Thread (Tridair Fastener)		
C9537	CA21037	(29372)
Shearpins		
C9570	4448S (XX)	(17446)
	KS426S (XX)	(17446)
	HLT915	(73197)
	4448	(58845)
	AICL807	(06725)
Spline Drive Bolts		
C7521	AIC596	(06725)
	120978	(80539)
Self-Locking Nut		
C9597	VCG0009	(06710)
	HL1285MRW	(73197)
	SPL51857D	(15653)
	80649	(56878)
	VN1310	(92215)

2.5 ADHESIVES.

2.5.1 FMS 1048, Hysol EA9317, and Magnolia Magnobond 63883 Elevated Temperature Epoxy Based Adhesives. The adhesives are room and elevated temperature curing epoxy and shall be mixed in accordance with vendor instructions. The adhesives are primarily used for structural adhesive, liquid shim applications, and bonding metal-to-metal surfaces.

2.5.2 EA9309 (04347) Modified Epoxy Adhesive. The adhesive is mixed 100 parts A, 23 parts B, and stored unmixed at 80°F or below. The shelf life may be extended 12 months if stored at 40°F or below.

2.5.3 FMS 1049B (MILS8802) (81755) Adhesive, Temperature Resistant. The mixed compound is a paste substance that may be applied with an ordinary spatula. The material cures at room temperatures and has excellent adhesion to aluminum, magnesium, titanium, stainless steel, and other materials. The adhesive is mixed 10 parts base compound to 1 part accelerator. Parts may be handled after material becomes firm and rubbery.

2.5.4 3145RTV (71984) and RTV189 High Tear Silicone Adhesives. The adhesive provides long term temperature stability at 400°C and intermittent stability to 500°C with corrosion free cure and high tensile and tear strength. The adhesive is a one part material and stored at a temperature not to exceed 80°C. storing at 40°C or below will extend the shelf life. The adhesive is applied directly from the collapsible tube or cartridge using the supplied plastic nozzle.

2.6 ROOM AND ELEVATED TEMPERATURE EPOXY ADHESIVE EA 900 (33564).

Room and elevated temperature epoxy adhesive is primarily used for structural adhesive, liquid shim applications, and bonding treated metal-to-metal surfaces.

2.6.1 Liquid Shim Application. To use as a liquid shim, the adhesive is injected into a cavity or buttered between two surfaces and cured as follows:

NOTE

- Excess epoxy adhesive shall be removed before it cures by using spatula instrument, followed by wiping with clean Fed. Spec CCC-C-440 or Fed. Spec DDD-C-301 cheesecloth moistened with P6174X solvent cleaner.
- When an assembly is to be disassembled after the applied shim material has cured, one surface shall be prepared with a release agent MS122 (18598).

a. Liquid shim cure cycle I - The shim shall not be disturbed for 5 hours after joining and shall be allowed to cure for a total of 24 hours at room temperature.

b. Liquid shim cure cycle II - The shim shall remain undisturbed for 1 hour at room temperature plus 1 hour at 260°F.

c. Liquid shim cure cycle III - The shim shall cure at room temperature of 75 (±5°F) for a minimum of 5 hours plus 1 hour at 180° to 200°F.

2.6.2 Substrate Cleaners and Cleaning Methods. The recommended cleaners and methods for cleaning various substrates in preparation for liquid shim application are as follows:

a. Cleaners:

Solvent compound - AMS 3167 Type 2 or H901A (1MFE1)

b. Substrates and cleaning methods:

Substrate	Cleaning Method
(1) Aluminum - Bare or clad	3
(2) Aluminum - Painted or primed	1 or 3
(3) Stainless Steel - Bare	2
(4) Stainless Steel - Painted or primed	1
(5) D6AC Steel - Bare	2
(6) D6AC Steel - Painted or primed	1
(7) Titanium	4

c. Cleaning methods:

(1) METHOD 1

(a) Roughen the surface by sanding and abrading.

(b) Wipe with clean Fed. Spec CCC-C-440 or Fed. Spec DDD-C-301 cheesecloth moistened with solvent compound.

(c) Allow to air-dry for a minimum of 15 minutes at room temperature.

WARNING

Trichloroethane is a chlorinated cleaner and can cause detrimental effects on steel if not properly removed by drying. Extreme care must be used to assure this cleaner is not trapped in crevices, around fasteners, etc., during cleaning. Use lightly moistened cheesecloth. Do not allow cleaner to run over surfaces.

(2) METHOD 2: Remove all rust and foreign material by grit blasting using No. 220-grit aluminum oxide, followed by wiping with clean cheesecloth moistened with 1,1,1-trichloroethane or trichloroethylene.

(3) METHOD 3

CAUTION

Cleaning shall be limited to parts in which there are no areas where the cleaner can collect or cannot be readily removed.

(a) If surface to be cleaned is painted or primed, continue with 2.6.2 Step c(3)(b); if surface is not painted or primed, omit 2.6.2 Step c(3)(b) and proceed to 2.6.2 Step c(3)(c).

(b) Scrub painted or primed surface with clean cheesecloth saturated with solvent compound. Any remaining paint or primer must be removed by abrading with No. 320-grit abrasive such as aluminum oxide or emery cloth.

(c) Wipe surface with clean cheesecloth saturated with solvent compound.

(d) Thoroughly abrade entire surface (except areas previously abraded in 2.6.2 Step c(3)(b)) with No. 320-grit abrasive such as aluminum oxide or emery cloth.

(e) Wipe surface with clean cheesecloth moistened with solvent compound to remove all traces of abrading residue.

(f) Immediately coat surface with acid paste cleaner PasaJell 105 (92108).

(g) Allow acid paste cleaner to stand without agitation for 12 to 15 minutes at room temperature.

(h) Flush coated surface with distilled or demineralized water until acid paste cleaner has been removed. Observe surface for water breaks

(i) Repeat 2.6.2 Step c(3)(f), 2.6.2 Step c(3)(g), and 2.6.2 Step c(3)(h) until water breaks do not occur

(j) Dry at 150°F maximum for 30 minutes.

(4) METHOD 4: METHOD 4 is identical to METHOD 3, except PasaJell 107 is used in place of PasaJell 105.

2.7 SEALING COMPOUNDS.

WARNING

Sealing compounds are flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

2.7.1 PR1425 (83574) Canopy Sealing Compound. The canopy sealing compound is a two-part polysulfide liquid polymer sealing compound. The canopy sealing compound has been especially formulated for aircraft window and canopy applications. The canopy sealing compound is mixed in a ratio of 10:1 by weight (base compound to accelerator). The shelf life of unmixed material is 10 months at 80°F or below. If the canopy sealing compound is supplied in a kit, the entire contents are to be mixed. The application life of the canopy sealing compound is the period of time that the mixed canopy sealing compound remains at a consistency for application with spatula or extrusion gun. The canopy sealing compound should be allowed to cure at 75°until a firm and rubbery condition exists. The cure time can be hastened by applying heat up to 130°F.

NOTE

Proper mixing of PR1425 canopy sealing compound and correct proportions are extremely important if maximum results are to be obtained. Mixing the compound by experienced personnel at some central location is recommended.

2.8 GENERAL USAGE OF INTEGRAL FUEL TANK AND FUEL CELL SEALING COMPOUND (MIL-S-83430).

MIL-S-83430 sealing compound is the only sealing compound approved for use on F-16 integral fuel tanks. This sealing compound is to be used for all F-16 fuel tank sealing applications. The sealing compound is a curing-type, high temperature (-65°F to +300°F), and fuel-resistant polysulfide elastomer which will be used in the following applications:

WARNING

Integral fuel tank and fuel cell sealing compound is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

a. Boundary Structure Faying Surfaces. Multiple fuel barriers shall be provided at all faying surfaces of the boundary structure which lead to the fuel tank exterior. One barrier is created by sealing the faying surfaces. Another barrier is produced by a fillet applied over seams and fasteners in all accessible areas of the fuel tank interior. F-16 wing faying surfaces include a sealing groove to provide an additional fuel barrier.

b. Intermediate Structure Faying Surfaces. Flanges of intermediate spars and bulk heads which attach to the boundary structure shall have faying surfaces sealed and fillets applied over seams in all accessible areas of fuel tank interiors. If the intermediate structure attaches to the tank exterior, the faying surfaces shall be sealed but no fillets will be required. Sealing grooves along seams will not be required in either case.

WARNING

Corrosion preventive coating is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

c. Fasteners. All permanent fasteners through the fuel tank boundary structure shall be installed with wet sealing compound to prevent fuel leakage. Permanent fasteners in interior connections of the fuel tank shall also be installed with wet sealing compound to assure corrosion protection in these connections. Removable fasteners such as access door screws and fuel quantity gage attaching screws will not be installed with wet sealing compound but shall be sealed by using dome nuts or sealing washers. For corrosion protection purposes, holes for removable fasteners located within the fuel tank and at boundary structure shall have corrosion preventive coating (MIL-C-27725) applied and cured before installing the fasteners. All accessible permanent fasteners, nuts, nutplates, and injection screws (interior type) used in the fuel tank boundary structure shall have a fillet of sealing compound applied as a secondary seal on the fuel tank interior to prevent fuel leakage. In some areas where the accessibility to the external wall of the tank is limited, fillets may be applied on the tank exterior for an additional sealing barrier.

d. Structural Voids. Openings on the structure which lead to the fuel tank exterior and internal voids that will be covered by fillets will be filled with sealing compound.

e. Corrosion Preventive Coating. Interior surfaces of the integral fuel tank structure, including the clips and brackets attached thereto, shall have a corrosion preventive coating applied to protect the metal surfaces against the corrosive effects of water, microorganisms, and other forms of contamination common to fuel tank interiors. This coating shall be applied, to the greatest extent possible, by spraying on detail parts following the primary metal treatment processes. Fuel lines, tubing, clamps, booster pumps, valves, quantity gages, and other nonstructural elements immersed in fuel will not require the application of corrosion preventive coating.

f. Removable Parts. Faying surfaces of access doors, fuel quantity gage fittings, and other removable parts shall be sealed with gaskets, molded rubber seals, or O-rings. On large attachments, such as access doors, gaskets are preferred.

g. Fuel Tank Panels. Openings in panels which are of honeycomb construction and are in contact with fuel shall be sealed to prevent entry of fuel to the panel interior.

h. Fuel Tank Electrical Connector Leaks. Fuel leaks from electrical connectors in fuel tanks shall be corrected as follows:

(1) Disconnect exterior harness from leaking connector.

(2) Gain access to the interior mounting of the leaking electrical connector.

(3) Remove connector from the tank structure.

WARNING

Methyl ethyl ketone is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles, gloves, and respirator are required to prevent injury to personnel.

(4) Thoroughly remove existing sealing compound from structure, mounting hole, and connector mounting surfaces; then clean with lint-free Fed. Spec CCC-C-440 or Fed. Spec DDD-C-301 cheesecloth using Fed. Spec TT-M-261 methyl ethyl ketone and apply MIL-C-38736 solvent compound inside and outside of tank.

(5) Apply MIL-S-83430 sealing compound from inside the tank to the connector mounting surface, the structure mounting surface, and the mounting hole.

(6) Insert connector from inside through mounting hole, apply thin layer of sealing compound to connector mounting from outside, and secure connector with retainer nut. Tighten retainer nut to value shown below.

Connector Size	Torque Inch-Pounds (±4)
10	55
12	65
14	85
16	100
18	100
20	125
22	125
24	150

(7) Allow sealing compound to cure until firm and rubbery before air testing or fueling tank.

2.8.1 Sealing Requirements. The primary requirements for the proper sealing of integral fuel tanks are excellent workmanship and close inspection of each sealing operation. This requires thorough knowledge of proper sealing materials and equipment in addition to precise attention to the specific sealing procedures. In order to obtain proper sealing of the boundary structure which contains sealing grooves, the mismatch of faying surfaces should not exceed 0.010-inch.

2.8.2 Safety Precautions. Practically all materials used in the sealing operations are toxic and/or flammable. Extreme care should be exercised in the use of these materials.

a. Avoid excessive breathing of fumes.

b. Wear protective clothing (gloves, goggles, etc.) approved for materials being used.

c. Structure must be electrically grounded before starting any sealing operation.

d. Areas adjacent to any sealing operation shall be well-ventilated, particularly enclosed or partially enclosed areas.

e. Only Underwriters Laboratory approved explosion-proof lights, blowers, and other equipment shall be used in sealing areas.

f. Firefighting equipment in working order must be present in all sealing areas.

g. Cleaners shall be kept in special polyethylene bottles or safety cans and in minimum quantities.

h. Care shall be used to prevent spilling the cleaners.

i. Soiled cleaning cloths shall be discarded into safety cans provided for that purpose.

2.8.3 Corrosion Preventive Coating for Integral Fuel Tanks (MIL-C-27725). MIL-C-27725 corrosion preventive coating is a two-part coating that requires mixing. The un-

mixed components shall be kept tightly closed when not in use to prevent thickening. The unmixed and uncured components may produce irritation following contact with the skin, eyes, or clothing. Careful handling and good suction ventilation are mandatory. After mixing, the coating must be put into use. Do not refrigerate.

2.8.4 Substrate Cleaners and Cleaning Methods. The recommended cleaners and methods for cleaning various substrates for MMM-A-1617 rubber base adhesive are as follows:

WARNING

- Solvent compound and acetone are flammable and toxic. Avoid eye and skin contact and prolonged breathing of vapors. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.
- Sanding and abrading operations create an environment of dust and flying particles. Goggles, gloves, and respirator are required. Irritation to eyes, skin, lungs, nose, and throat may result if personnel fail to observe this warning.

a. Cleaners:

(1) Solvent compound - This cleaner is formulated in accordance with MIL-C-38736.

(2) Acetone - Acetone used shall conform to Fed. Spec O-A-51.

b. Substrates and cleaning methods:

Substrate	Cleaning Method
(1)Aluminum - Bare or clad	2
(2)Aluminum - Painted or primed	2
(3)Stainless Steel - Bare	1 or 2
(4)Stainless Steel - Painted or primed	1 or 2
(5)D6AC Steel - Bare	1 or 2
(6)D6AC Steel - Painted or primed	2
(7)Titanium	1
(8)Teflon	3
(9)Nylon	2

c. Cleaning methods:

(1) METHOD 1

(a) If the surface to be cleaned is painted or primed, proceed with 2.8.4 Step c(1)(b). If the surface to be cleaned is not painted or primed, omit 2.8.4 Step c(1)(b) and proceed to 2.8.4 Step c(1)(c).

(b) Scrub the painted or primed surface with clean cheesecloth saturated with solvent compound. Any remaining paint or primer must be removed by abrading with No. 240-grit or finer abrasive such as aluminum oxide or emery cloth.

(c) Wipe the surface to be cleaned with clean Fed. Spec CCC-C-440 or Fed. Spec DDD-C-301 cheesecloth saturated with solvent compound.

(d) Wipe dry with clean cheesecloth before the solvent compound dries. Visually examine the cheesecloth and the surface for cleanliness. Repeat 2.8.4 Step c(1)(c) and 2.8.4 Step c(1)(d) until visually clean surface is obtained.

(e) Allow the surface to air-dry at room temperature for a minimum of 30 minutes (heat drying at 120°F for 15 minutes may be substituted for air-drying).

(f) The cleaned surface may be protected with clean, wax-free Kraft paper for 8 hours without recleaning.

(2) METHOD 2

(a) If the surface is painted or primed, remove the surface gloss by abrading with No. 240-grit or finer abrasive such as aluminum oxide or emery cloth. If the surface is not painted or primed, roughen the surface by abrading with No. 240-grit or finer abrasive such as aluminum oxide or emery cloth.

(b) Clean the sanded surface with cheesecloth saturated with solvent compound.

(c) Wipe dry with clean cheesecloth before the solvent compound dries.

(3) METHOD 3

(a) Wipe the surface to be bonded with clean cheesecloth saturated with acetone.

NOTE

When bonding Teflon, the surface to be bonded must have been previously treated (etched) to produce a bondable surface. Treated surfaces are evidenced by a brown color. When the treated surface is not readily apparent, the surface may be tested by marking with a felt-tipped ink pen. Beading of the ink indicates the surface has not been treated (etched). This test should be performed prior to cleaning.

(b) Allow to air-dry for a minimum of 15 minutes at room temperature.

2.8.5 Application Method. The recommended method for applying adhesive is as follows:

WARNING

Adhesives are flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

a. Mix the proper amount of catalyst into the adhesive.

b. Apply a thin, even coat of adhesive to either of the mating surfaces.

c. Join the mating surfaces together and apply enough pressure to hold the parts together.

d. The joined parts should remain undisturbed for the appropriate cure time.

2.9 AIRCRAFT SURFACE SMOOTHNESS.

This section describes the guidelines for maintaining the aircraft surface smoothness levels necessary to the performance of the F-16 aircraft. (Refer to Figure 2-3 through Figure 2-12.)

2.9.1 Aerodynamic Smoother. It is preferable to meet surface smoothness guidelines without the use of aerodynamic smoother. If aerodynamic smoother is necessary during maintenance, its use shall be limited to correction of mismatches and gaps exceeding the limits of Figure 2-3 and Figure 2-12, but only for the following:

a. Fixed structure and infrequently removed structural panels (normally in excess of 500 flight hours).

b. Cases where it is required by engineering drawings or structural repair manual (TO 1F-16( )-3-1).

c. Other specific authorizations following inspection by established procedures.

d. Slotted and/or recessed fastener heads in fixed structure and infrequently removed panels. Aerodynamic smoother shall not be applied in the head slots of screws, quick fasteners, slots, gaps, or joints associated with actuated doors, hinged doors, access covers, or infrequently removed panels nor in the engine inlet duct or in the gun port.

2.9.2 External Surface Smoothness Zones. The aircraft external surface is classified into smoothness Zones I and II, providing limits for repair and replacement. The zones and limits are defined in Figure 2-3.

2.9.3 Mismatch and Gaps. Figure 2-4 through Figure 2-12 present mismatch and gap guidelines for specific components and areas of the aircraft external surface. Instructions for application of aircraft smoother are detailed in TO 1F-16( )-3-1.

2.9.4 Holes. Care is to be taken in filling any holes on the aircraft with aerodynamic smoother. Most of the holes are either drain holes or vent holes. Service holes, such as access to grease fittings and jack points, must have caps over them and must meet the smoothness limits of this manual.

2.9.5 Internal Surface Smoothness Limits. Zones have been established for two major areas of the aircraft internal airflow surface (called Zones I and II) as defined in Figure 2-13. Limits for internal surfaces are summarized in Figure 2-13 and are described in more detail for specific areas in the following paragraphs. This section applies to the internal inlet duct and the ECS secondary air diverter passage.

2.9.6 Mismatch and Gaps. Figure 2-14 and Figure 2-15 present mismatch and gap limits for specific components and areas of the aircraft internal airflow surface.

a. Inlet Cowl Lip. Zone I smoothness limits for permanent joints shall apply.

b. Inlet Duct Strut. Zone I smoothness limits for permanent joints shall apply (refer to Figure 2-14).

c. Inlet Duct. Two percent of the total fasteners in the inlet duct (maximum of 15 fasteners in Zone I only) may have a maximum acceptable flushness of ±0.020-inch in lieu of the ±0.005-inch shown in Figure 2-13. Aerodynamic smoother is not to be applied in the inlet duct.

d. Engine Face-Duct Mating. Zone II limit shall apply for the engine face-duct mating joint as noted in Figure 2-13. (Refer to Figure 2-14.)

e. Diverter Passage. Zone II smoothness guidelines shall apply to the diverter passage and diverter forward of FS 243 (manufacturing break). Figure 2-15 shows typical smoothness.

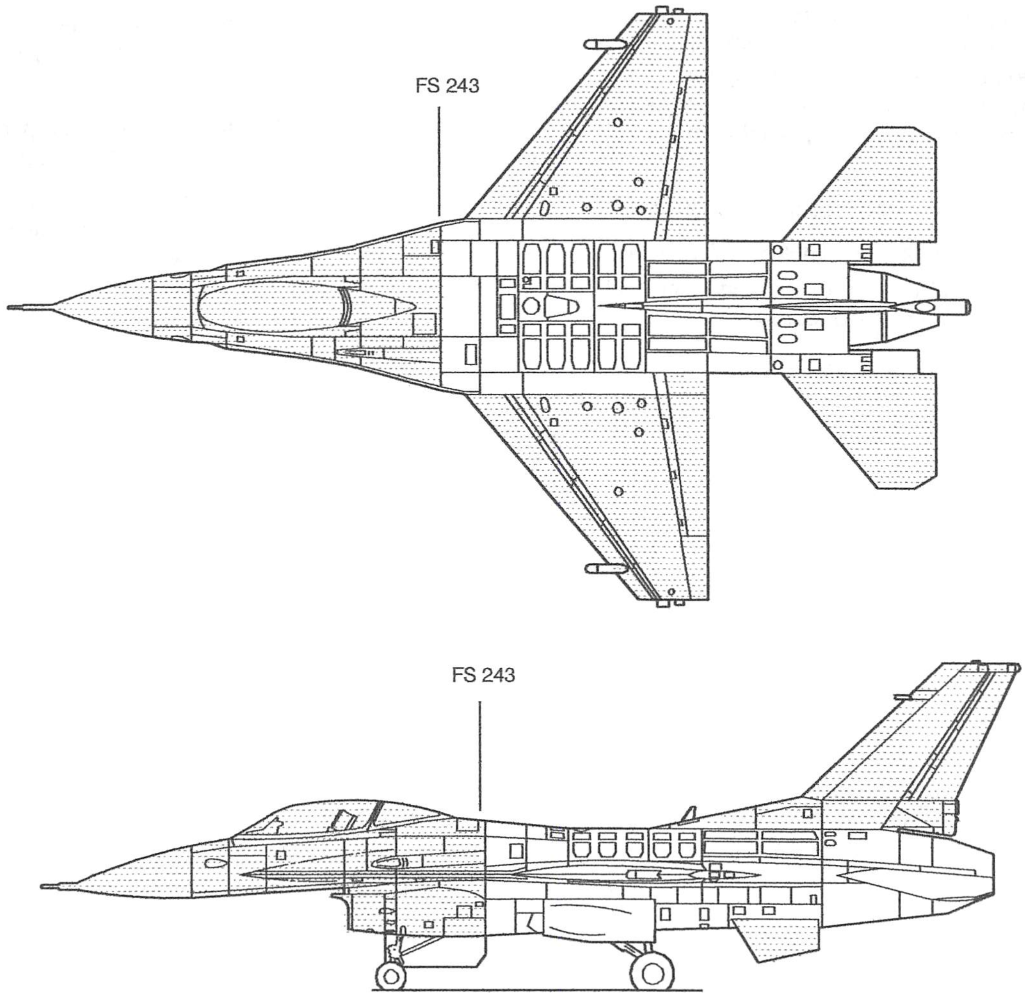
2.9.7 Surface Contour and Waviness. The surface contour limits of Figure 2-13 shall apply to internal Zones I and II. Surface waviness shall be limited to a height-to-length ratio of 0.008-inch/inch when measured from peak to peak or from valley to valley with a slope maximum of 0.016-inch/inch in Zone I and four times this value in Zone II.

2.9.8 Engine Alignment. Engine centerline true design alignment is coincident with the fuselage longitudinal axis (i.e., BL 0.00/WL 91.00). The engine must be positioned so it is within ±0.09-inch (axially) of its true design alignment at the fuselage stations corresponding to the three engine mount points.

2.9.9 Nominal Surface Condition. Every effort shall be made to maintain high quality F-16 surface smoothness conditions. Surface smoothness levels summarized in Figure 2-3 and Figure 2-13 represent maximum limits. Drag allowances

for aircraft performance, however, are based on expected nominal surface conditions for F-16 series aircraft. (The more relaxed maximum smoothness limits shown in Figure 2-3 and Figure 2-13 are intended to permit significant cost reduction by minimizing discrepant rework.) The expected nominal values are as follows:

Gaps:	Permanent panels - 0.030-inch
	Removable panels - 0.050-inch
Mismatch:	80 percent of the panels in Zone I - 0.020-inch
	20 percent of the panels in Zone I - 0.030-inch (maximum)
	80 percent of the panels in Zone II - 0.020-inch
	20 percent of the panels in Zone II - 0.045-inch (maximum)



ZONE I

- FUSELAGE FORWARD OF FS 243
- WINGS, LEADING EDGE FLAPS, FLAPERONS
- HORIZONTAL STABILIZER
- VERTICAL STABILIZER, DORSAL, RUDDER
- VENTRAL FINS
- CANOPY
- PYLONS

ZONE II

- FUSELAGE AFT OF FS 243

CO-00GV-00-1-0250X99

Figure 2-3. External Surface Zones for Smoothness Criteria and Limits.

Table 2-10. External Surface Zones for Smoothness Criteria and Limits.

	ZONE I	ZONE II
SURFACE FINISH (AA MICROINCHES, 1 MICROINCH =0.000001-inch) ALL SURFACES (BEFORE AND AFTER PAINTING OR COATING)	250 MAX	250 MAX
FLUSH RIVETS, SCREWS, AND FASTENERS (INCHES)	±0.005	±0.008
DOME HEAD NAS SCREWS, FASTENERS, ETC. (INCHES)	0.016 MAX	0.016 MAX
MISMATCH (INCHES)		
PERMANENT JOINTS	0.020 MAX	0.030 MAX
REMOVABLE PANELS	0.030 MAX	0.045 MAX
WING CONTROL SURFACES	SEE Figure 2-4	
VERTICAL STABILIZER AND RUDDER	SEE Figure 2-5	
HORIZONTAL STABILIZER	SEE Figure 2-8	
NOSE RADOME/FUSELAGE INTERFACE (FIG. 518)	0.030 MAX	
LOWER STRAKE DOORS (2101 AND 2202)	SEE Figure 2-10	
GUN PORT	SEE Figure 2-11	
ENGINE ACCESS PANEL		SEE Figure 2-12
ENGINE NOZZLE FAIRING (4409)		±0.090
GAPS (INCHES)		
PERMANENT JOINTS	0.060 (+0.030) (-0.060)	0.060 (+0.030) (-0.060)
REMOVABLE PANELS	0.060 (+0.030) (-0.060)	0.060 (+0.030) (-0.060)
EXCEPT FOR PANELS 4423, 4427, 4428, 4430, 4477, 4478	0.060 (+0.090) (-0.060)	
AND PANELS 5305, 5307, 5409, 5413, 6306, 6308, 6410, AND 6414	0.060 (+0.090) (-0.040)	
WING CONTROL SURFACES	SEE Figure 2-4	
VERTICAL STABILIZER AND RUDDER	SEE Figure 2-5	
HORIZONTAL STABILIZER	SEE Figure 2-8	
NOSE RADOME/FUSELAGE INTERFACE	SEE Figure 2-9	
LOWER STRAKE DOORS (2101 AND 2202)	SEE Figure 2-10	
GUN PORT	SEE Figure 2-11	
WING PYLON SWAY BRACE ATTCH POINTS SPOT FACE	0.150 MAX	
ENGINE NOZZLE FAIRING (4409)		0.120 MAX

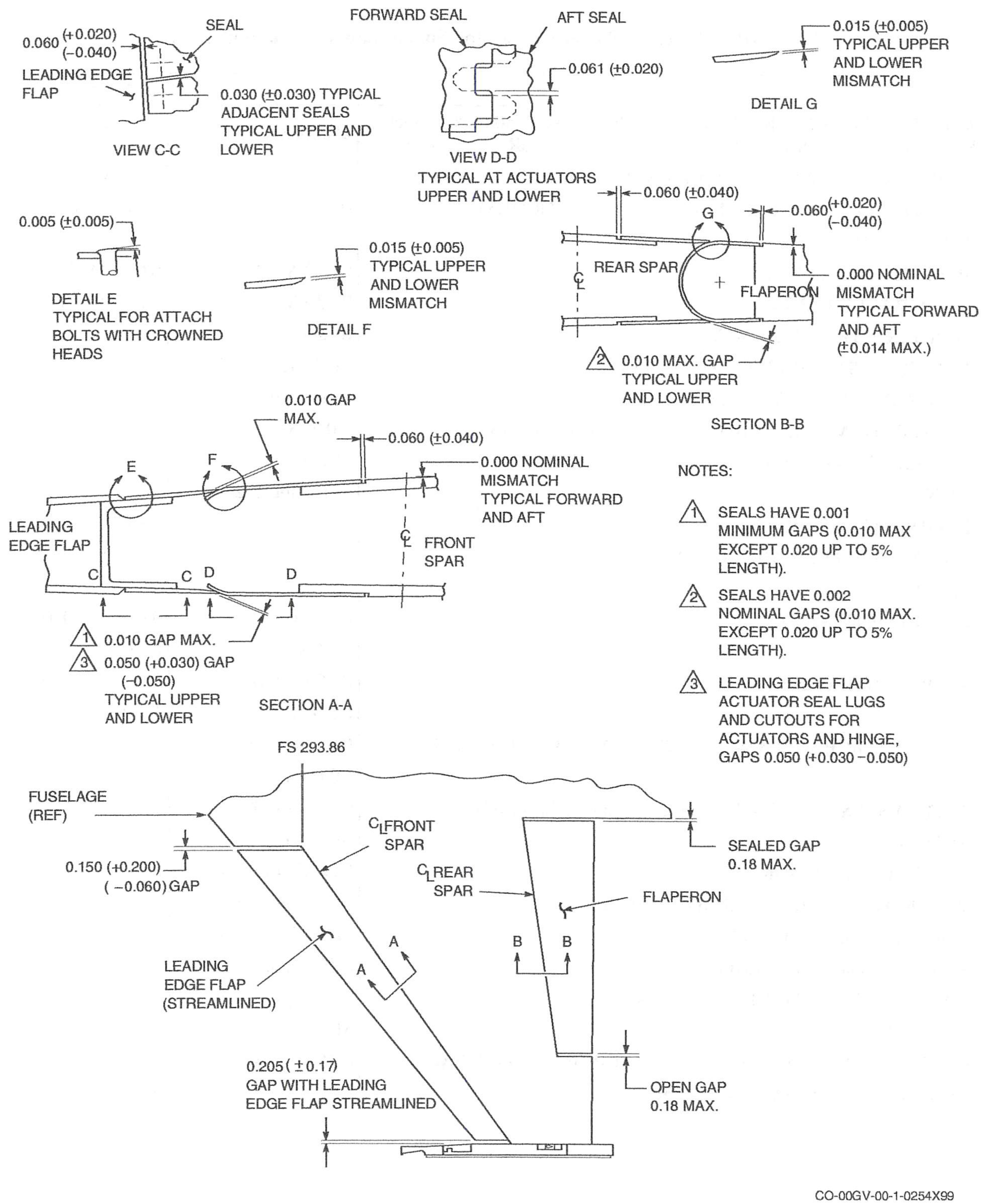


Figure 2-4. Wing Control Surfaces for Nominal Gaps and Mismatches.

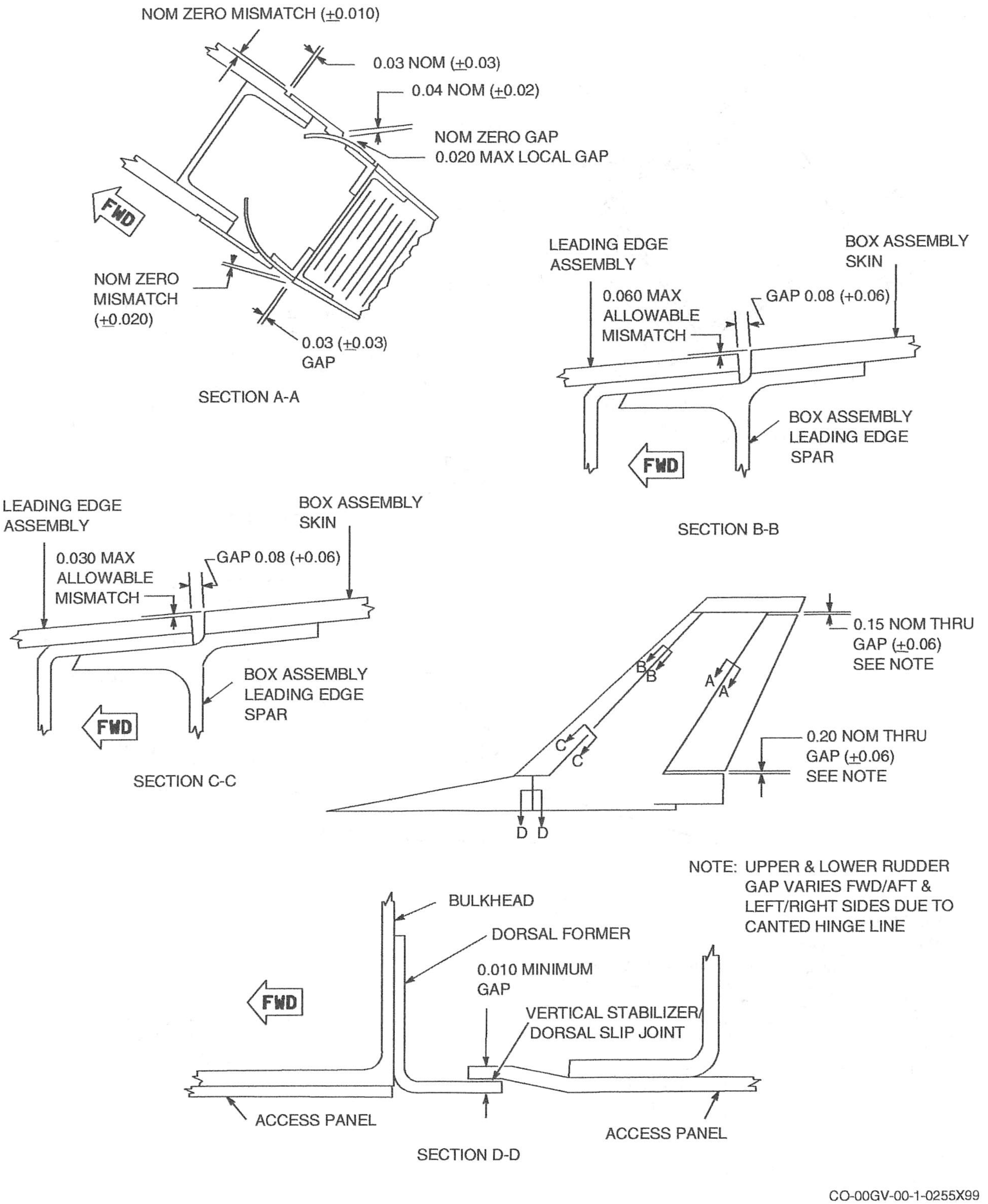


Figure 2-5. Vertical and Horizontal Tail Gaps and Mismatches.

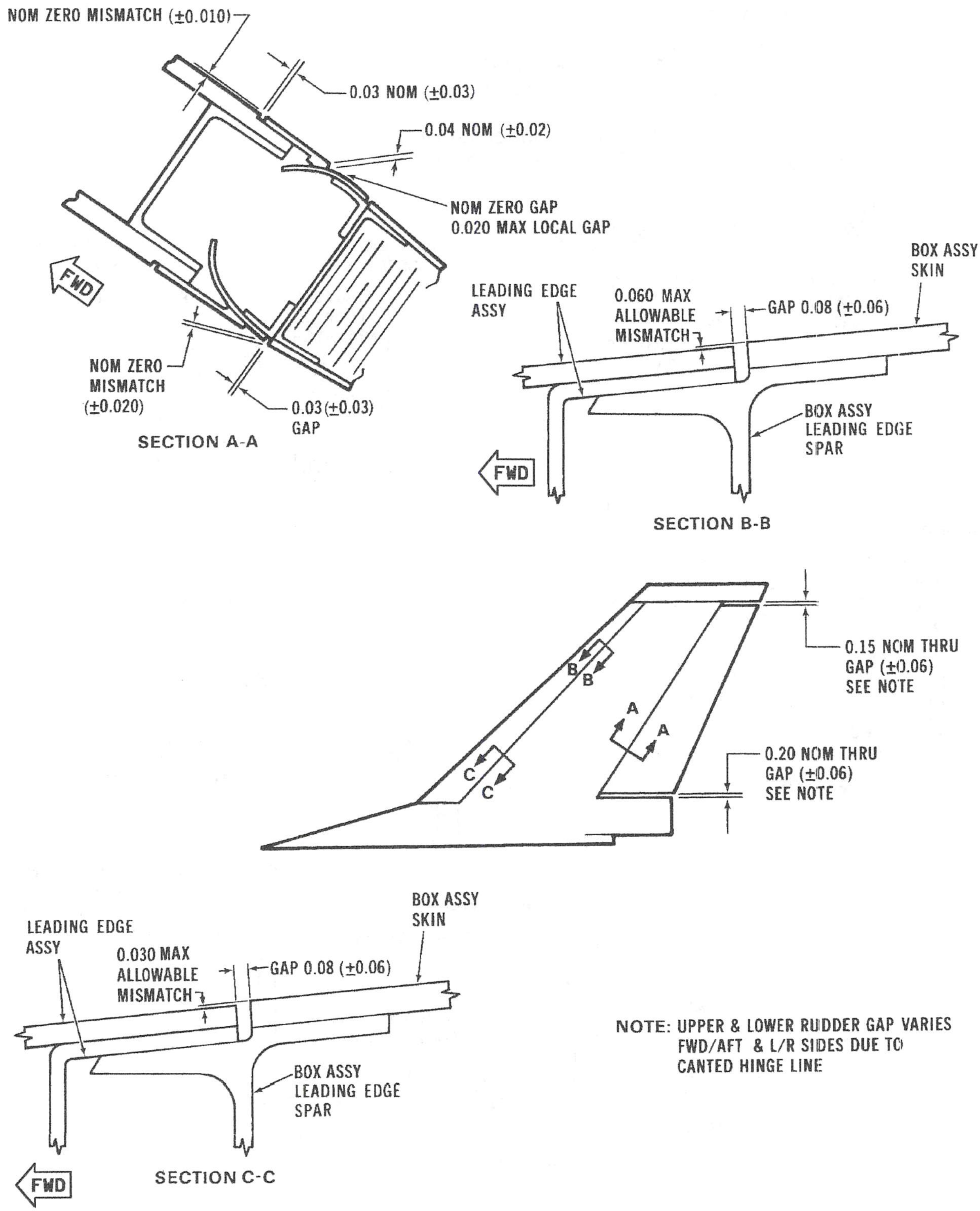


Figure 2-6. Vertical Stabilizer Gaps and Mismatches.

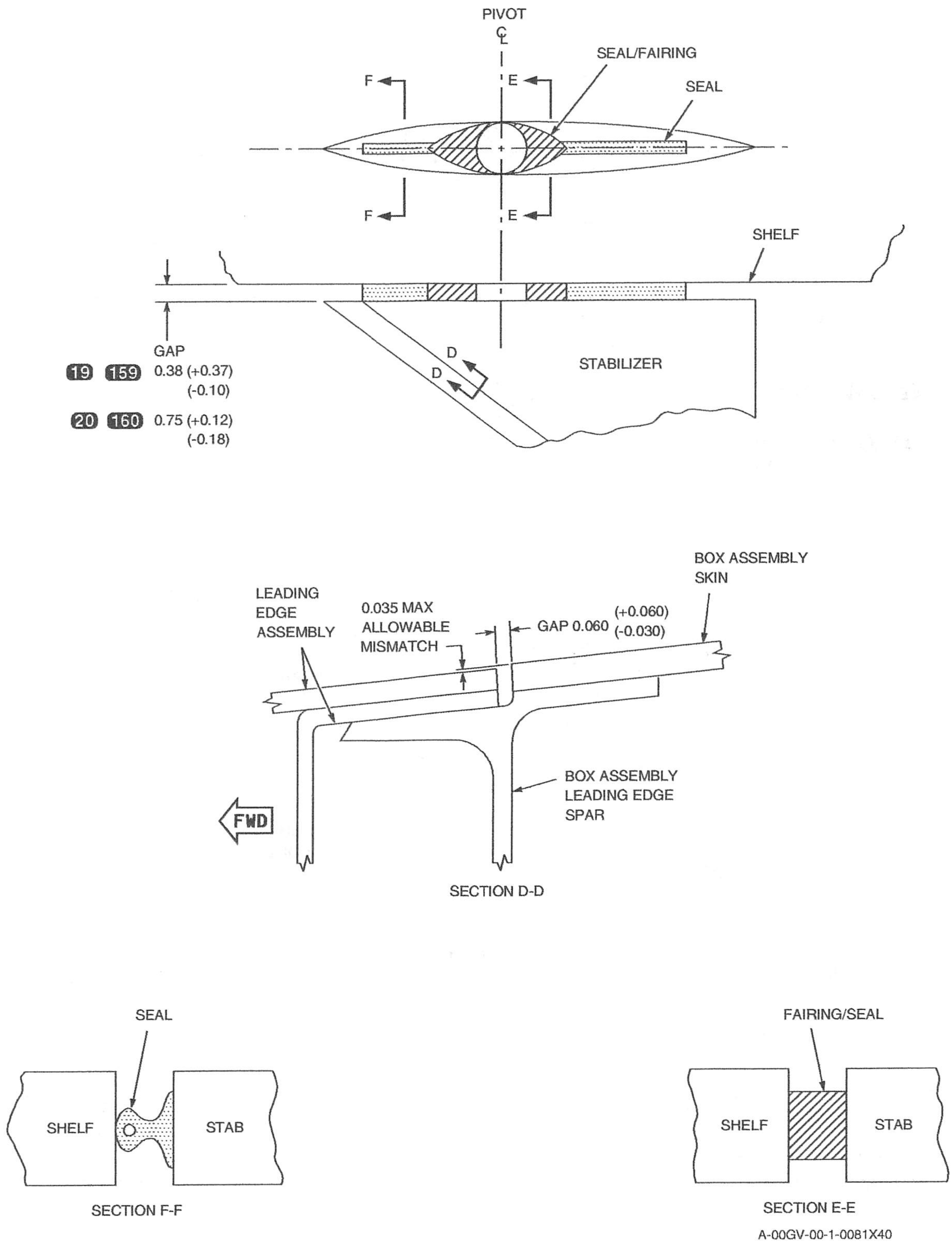


Figure 2-7. Horizontal Stabilizer Gaps and Mismatches.

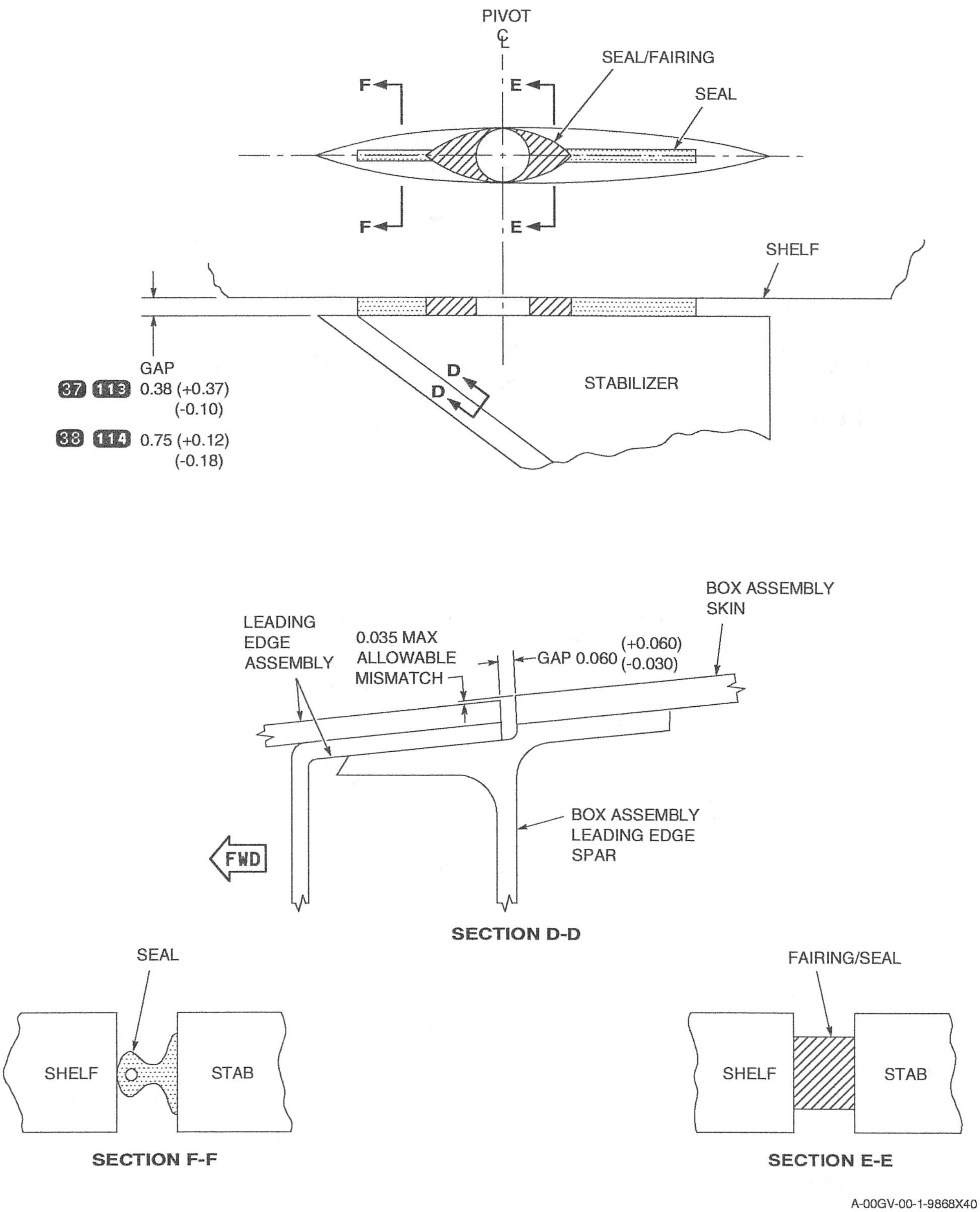


Figure 2-8. Horizontal Stabilizer Gaps and Mismatches.

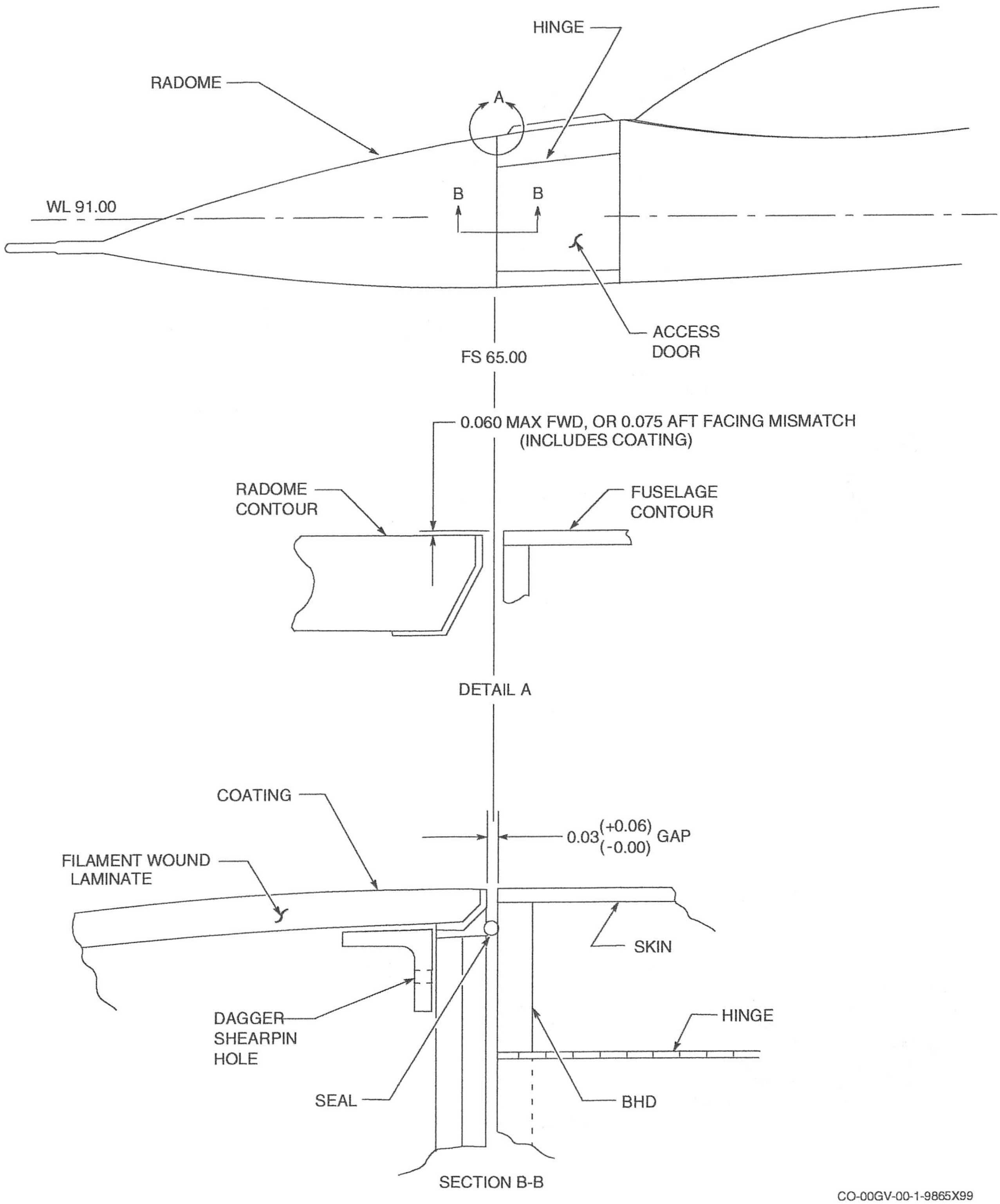
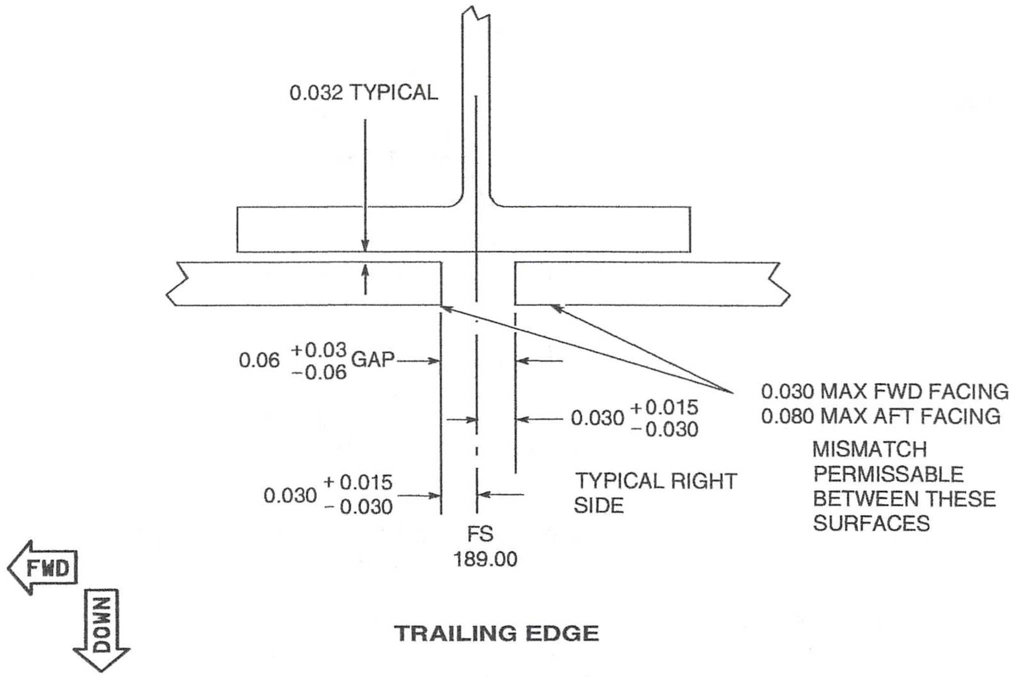
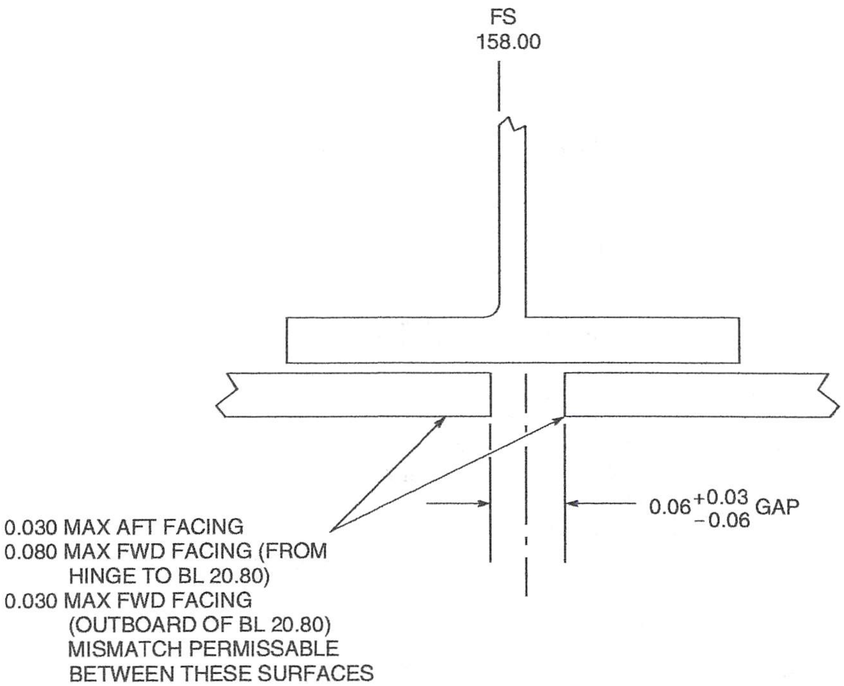


Figure 2-9. Nose Radome/Fuselage Interface Gaps and Mismatches.



TRAILING EDGE



LEADING EDGE

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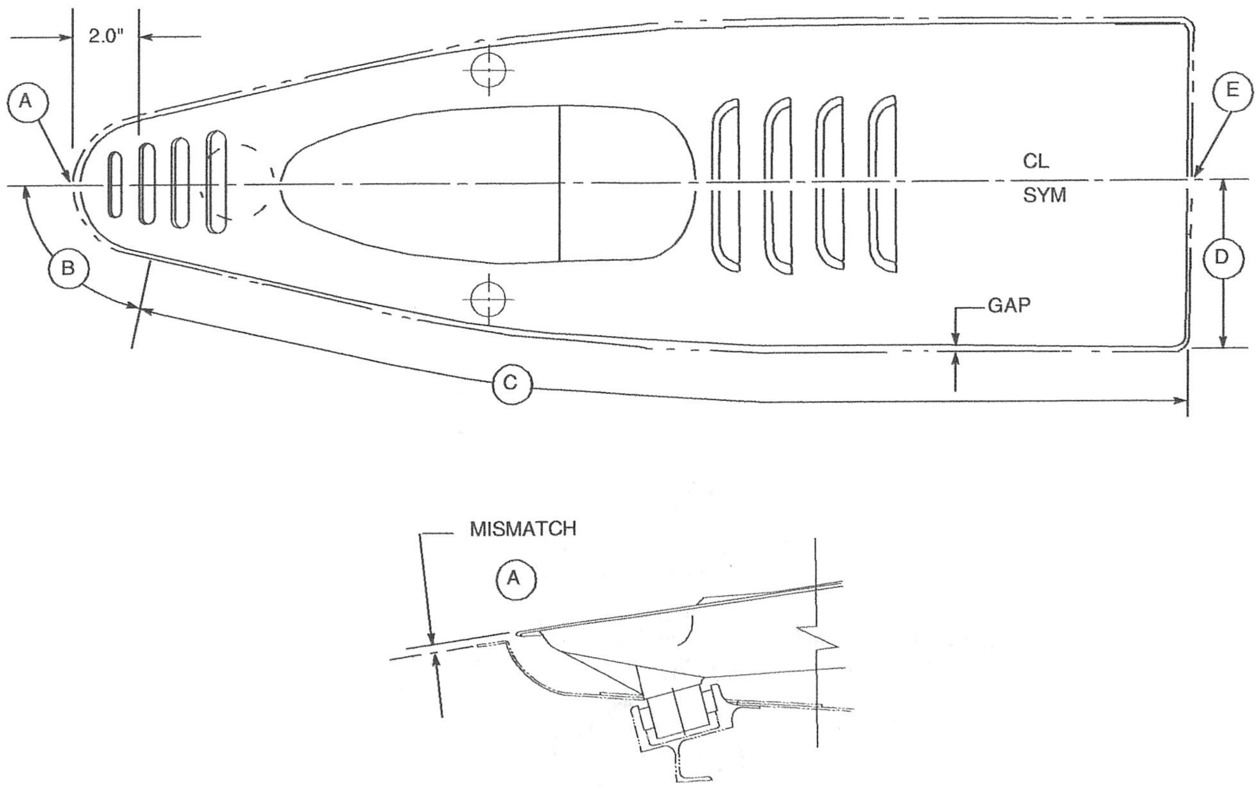
Figure 2-10. Lower Strake Doors (2101 and 2202) Gaps and Mismatches.



Perimeter Segment	Gap (Inches)	Mismatch (Inches)
A	0.120 + 0.060 − 0.040	+ 0.000 − 0.125
B	1	1
C	0.10 + 0.09 − 0.06	+ 0.080 − 0.125
D	0.10±0.10	2
E		+ 0.080 − 0.125

1 MAY VARY UNIFORMLY BETWEEN A AND C VALUES

2 MAY VARY UNIFORMLY BETWEEN C AND E VALUES

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Figure 2-11. Gun Port Gap and Mismatch Limits.

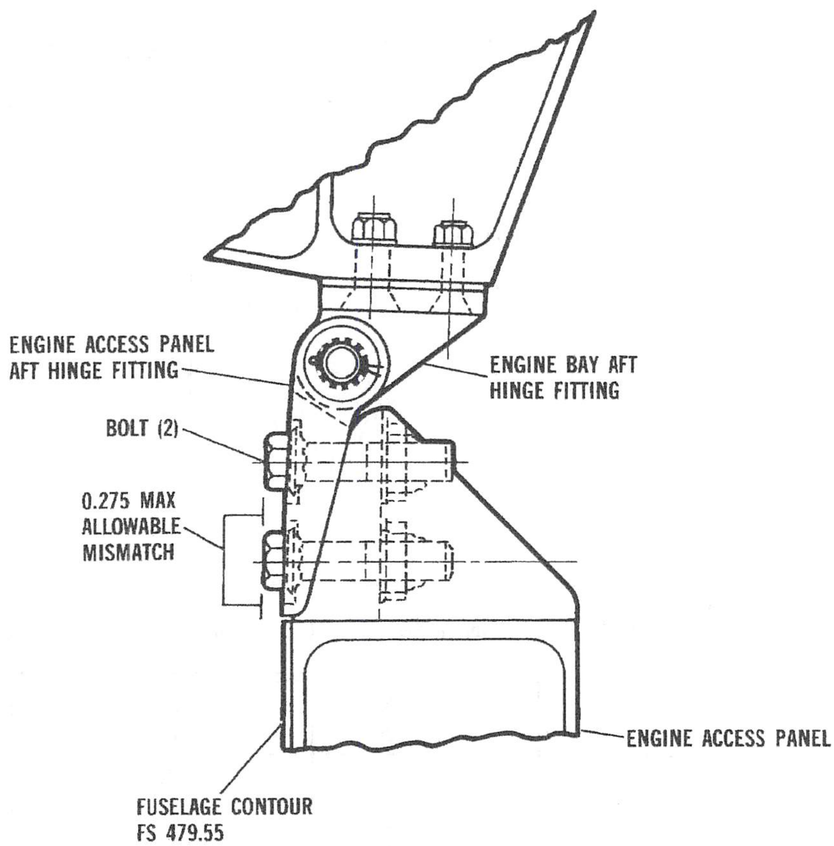

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Figure 2-12. Engine Access Panel Aft Hinge Fitting Mounting Bolt Mismatch to Contour Limits.

	ZONE I	ZONE II
SURFACE FINISH (AA MICRO-INCHES, BEFORE AND AFTER PAINTING, 1 MICRO-INCH = 0.000001 INCH	250 MAX	250 MAX
INLET LIP CASTING (BEFORE PAINTING)	350 MAX	
FLUSH RIVETS, SCREWS AND FASTENERS (INCHES)	±0.005	±0.008
MISMATCH (INCHES)		
PERMANENT JOINTS	0.030 MAX	0.040 MAX
MFG SPLICES AT FS 189, 243, 279.4, 341.8 (SEE FIG. 5-13)		
FWD-FACING	0.030 MAX	
AFT-FACING	0.040 MAX	
ENGINE/DUCT AND ELASTIC SEAL INTERFACE (SEE FIG. 5-12)		±0.150 MAX (COLD)
INLET DUCT/STRUT INTERFACE (SEE FIG. 5-12)	0.030 MAX	
INLET BOUNDARY LAYER AIR DIVERTER PASSAGE		(SEE FIG. 5-13)
GAPS (INCHES)		
PERMANENT JOINTS: BUTT	0.030 MAX	0.040 MAX
LONGITUDINAL	0.040 MAX	0.100 MAX
INLET DUCT/STRUT INTERFACE	(SEE FIG. 5-12)	
BUTT GAP AT MFG SPLICE AT FS 243	0.040 MAX	
ENGINE/DUCT AND ELASTIC SEAL INTERFACE (SEE FIG. 5-12)		0.034 MAX (COLD)
INLET BOUNDARY LAYER AIR DIVERTER PASSAGE		(SEE FIG. 5-13)
ENGINE ALIGNMENT (INCHES)		
SEE PARAGRAPH 5-40		±0.09 MAX

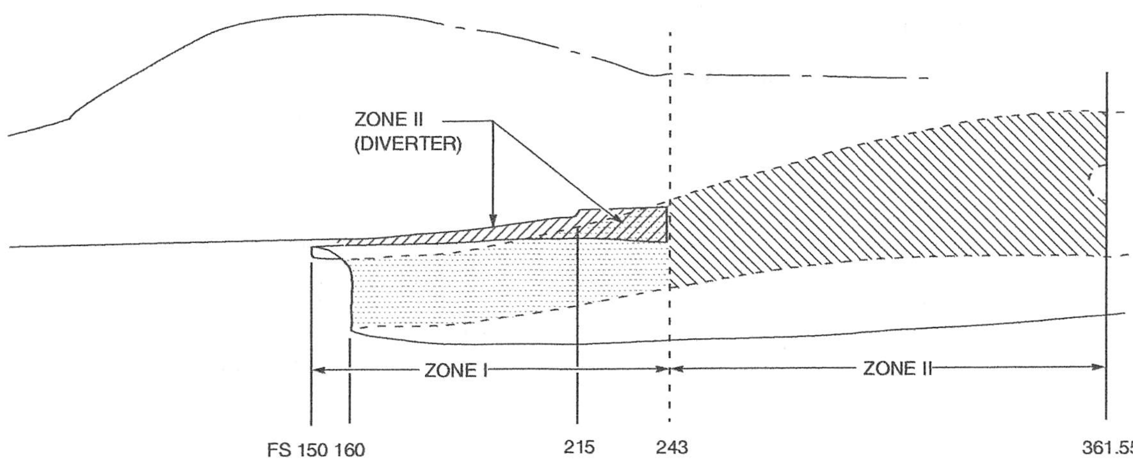

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Figure 2-13. Internal Surface Air Induction System and Diverter Zones for Smoothness Limits.

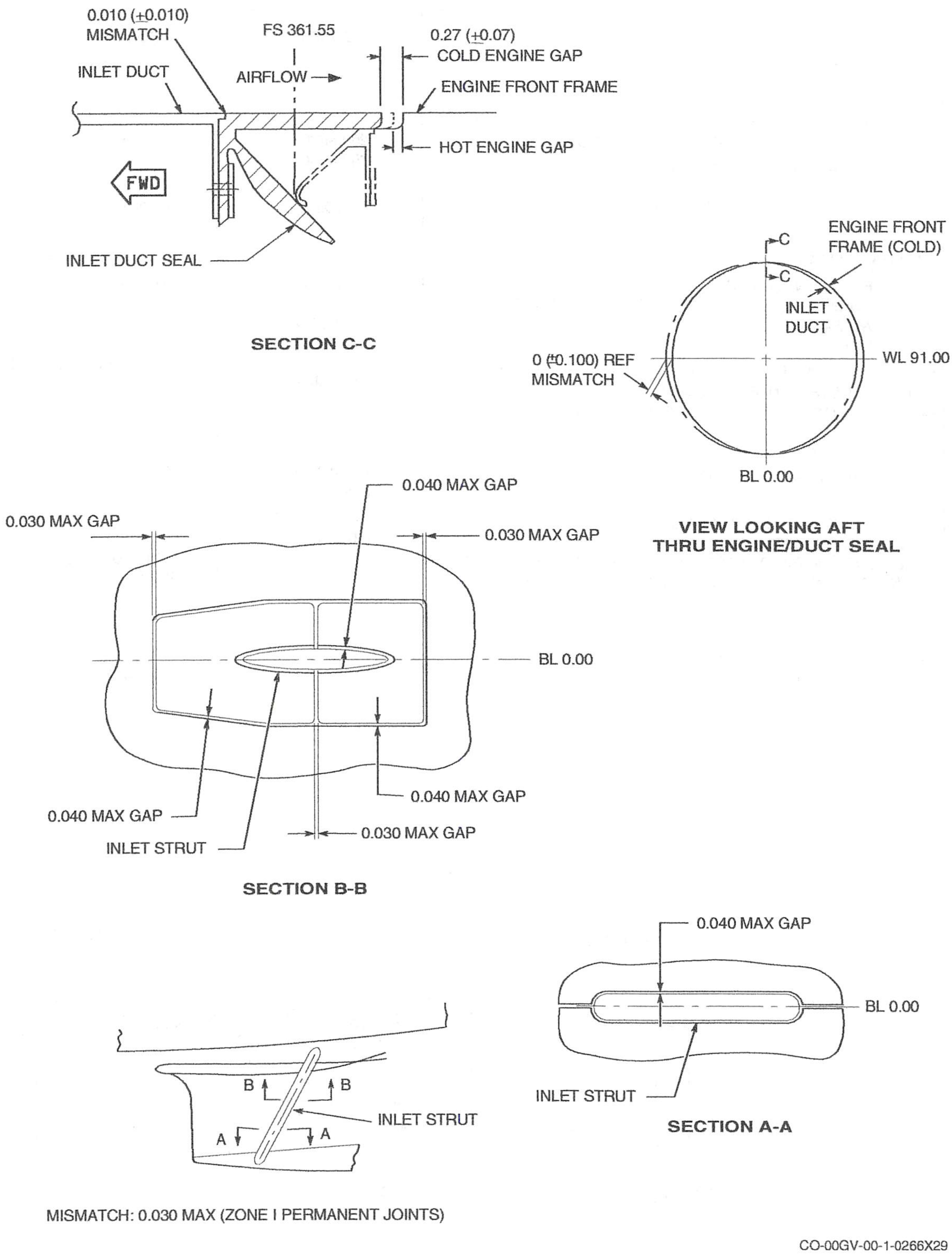

Figure 2-14. Induct Duct/Strut and Engine/Inlet Duct Seal Interface Gap and Mismatch Limits.

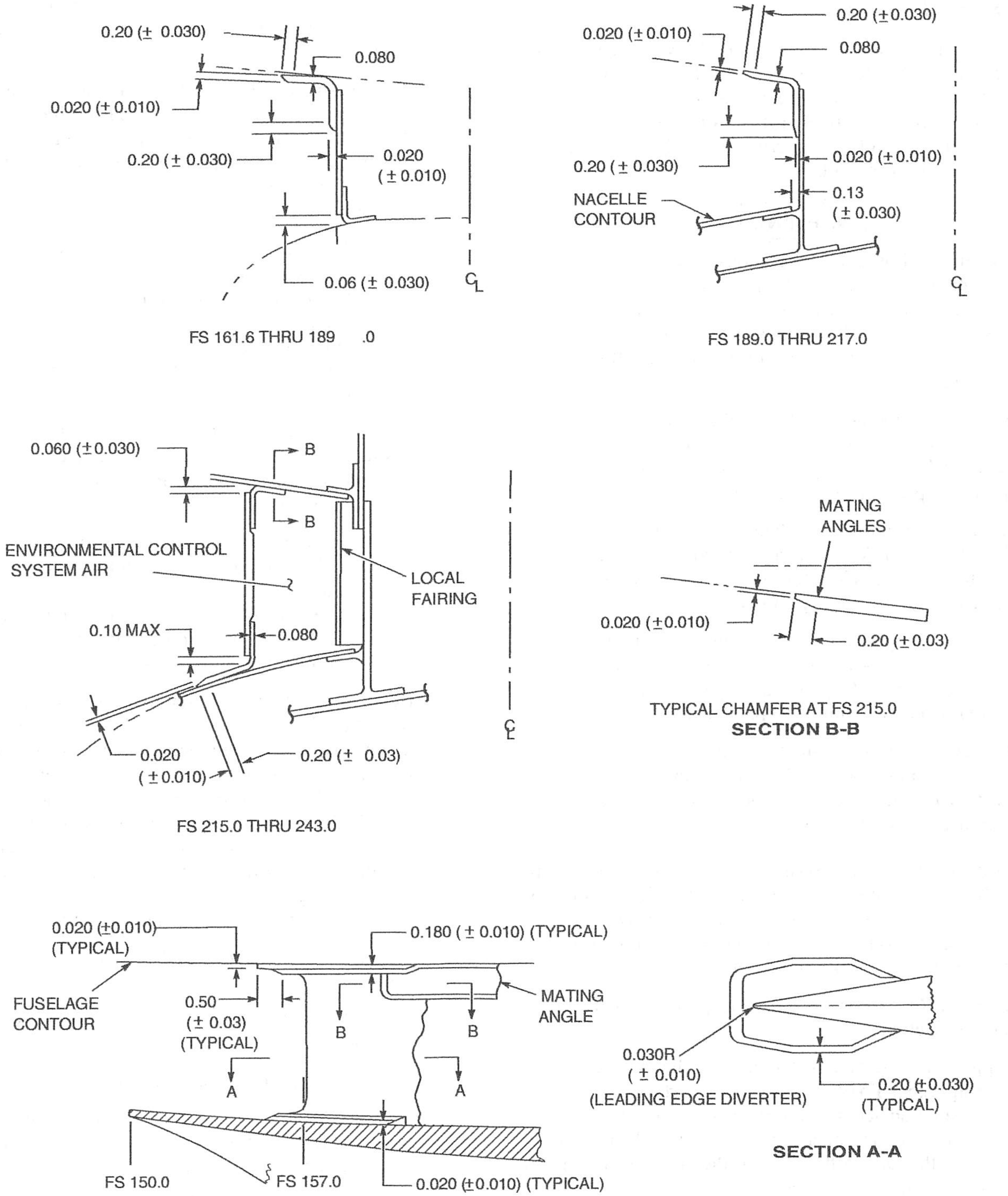

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Figure 2-15. Inlet Boundary Layer Air Diverter Passage Gap and Mismatch Limits.

2.10 FORM-IN-PLACE GASKET.

This type of gasket consists of a layer of sealing compound MIL-S-83430 between the periphery of a door and the mating aircraft structure. The form-in-place gasket adheres to the aircraft structure only and is of sufficient thickness to provide a positive seal. The following procedures shall be used to apply a form-in-place gasket:

WARNING

- Sanding and abrading operations create an environment of dust and flying particles. Goggles, gloves, and respirator are required. Irritation to eyes, skin, lungs, nose, and throat may result if personnel fail to observe this warning.
- Solvent compound is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.
- Adhesion promoter is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.
- Sealing compound is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.
- Release agent is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

a. Abrade surface of existing sealing compound with MIL-A-9962 abrasive mat and wipe with a brush or Fed. Spec CCC-C-440 or Fed. Spec DDD-C-301 cheesecloth wet with MILC38736 solvent compound. Dry with clean, dry cheesecloth.

b. Apply PR148 (83574) adhesion promoter with brush or cheesecloth.

c. Apply masking tape to the edge of the skin panel and parting agent P61762 to the door surfaces and to the skin panel adjacent to the door as shown in Figure 2-16. Allow parting agent P61762 to dry; then carefully remove the tape at the edge of the skin panel (applied to contain the parting agent).

d. To assure the formed gasket under the door has the proper thickness, appropriate spacers shall be used at each fastener hole. The spacers may consist of shouldered plugs, shouldered studs, or washers as shown in Figure 2-16. Depending upon the type of spacer used, the door will be retained in position and pulled down properly by installing door fasteners for washers or shoulder plugs and nuts for shoulder studs. When using plugs, every fourth hole shall be a door fastener.

e. With washers and/or plugs in position, apply sealing compound (MIL-S-83430) around the flange. Smooth the sealing compound with a spatula to a level slightly above that of the washers or plug shoulders to assure a slight amount of squeeze-out when the door is installed.

f. Carefully place the door over the frame and lower it onto the washers, plugs, and/or studs, insuring holes are in proper alignment. Studs in a few of the open holes will serve as guides for the door. With the door in position, install fasteners in the remaining open holes and tighten until the door fairs in and rests on the washers or plugs.

g. Add more sealing compound where the squeeze-out has not filled gap. Use a spatula cut square on the end and smooth the sealing compound flush with the door and the edge of the skin panel.

h. Cure the sealing compound until it becomes firm and rubbery; then remove the flashing of cured sealing compound from the outer surfaces. Plastic scrapers or suitable instrument which will not scratch the metal surface, followed by wiping with cheese cloth and solvent compound, may be used.

i. Remove the door; then remove the washers or plugs from the flange. Examine the fastener holes and remove any sealing compound that would impair the installation of the door fasteners. If sealing compound has flowed over the edge of the door-frame, carefully trim it flush with the edge. If some areas of the formed gasket are not completely filled with sealing compound, rework can be accomplished by adding more sealing compound and reinstalling the door to obtain the correct level for the new material.

j. Unbonded studs (P075) and brackets are rebonded as follows:

(1) Mark the location of the stud or bracket on the substrate.

(2) Remove the unbonded stud or bracket.

(3) Remove all traces of sealing compound from substrate by softening with nonaromatic cleaner and using a plastic scraper.

(4) Let cleaned surface dry.

(5) Apply fresh sealing compound to the substrate and press bracket into the sealing compound, rotating slightly to seat it against the substrate.

(6) Cure sealing compound for 24 hours at 70°F or above.

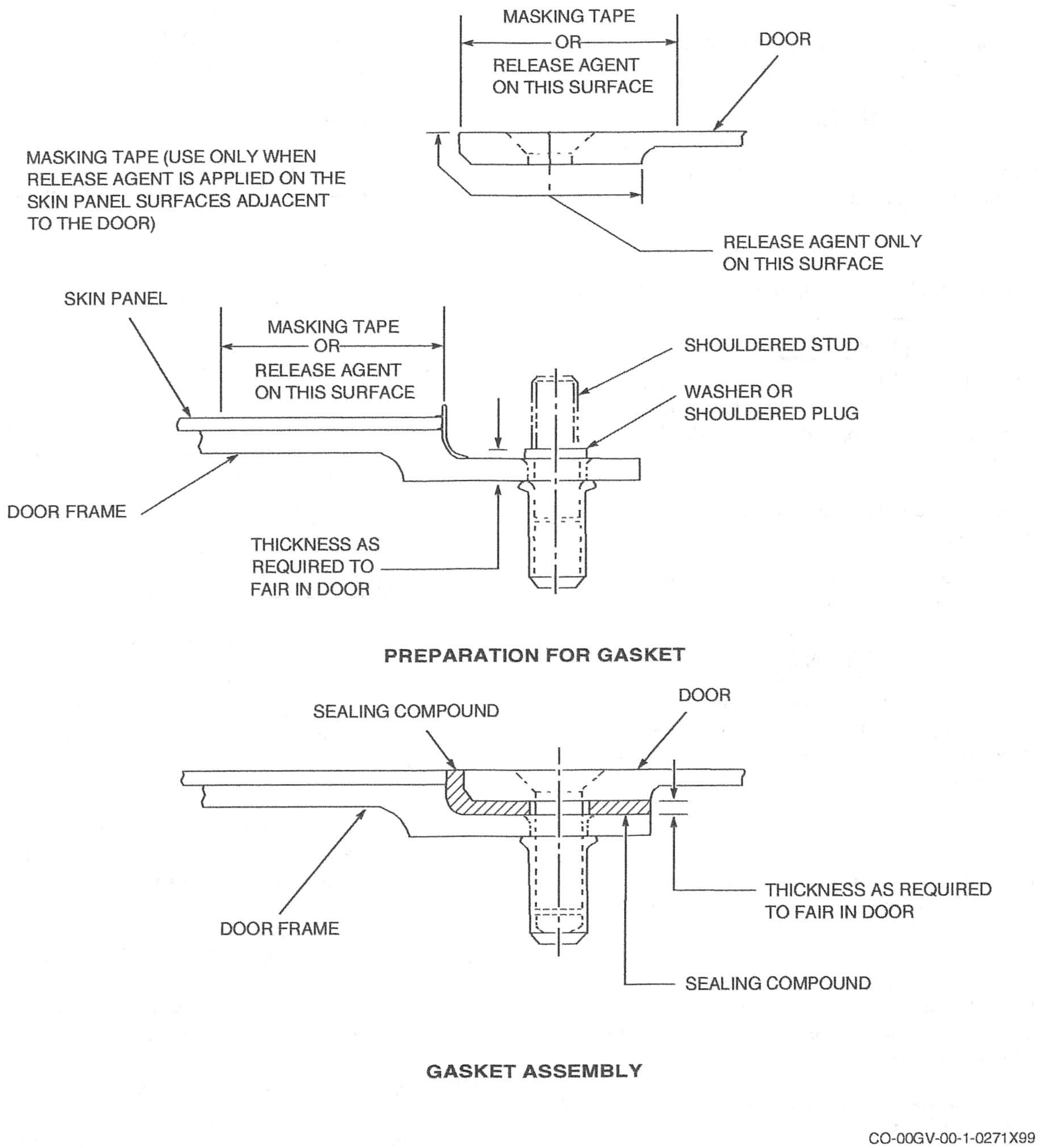


Figure 2-16. Form-in-Place Gasket.

2.11 COCKPIT INSULATION INSPECTION, REPAIR, AND REPLACEMENT.

a. Inspection: Determine the extent of damage to insulation assembly.

NOTE

If less than 90 percent of the original insulation remains, the assembly shall be replaced; all others may be repaired.

b. Repair.

(1) Remove applicable equipment to facilitate repair.

CAUTION

Extreme care shall be used not to further damage the insulation assembly due to additional tape which has been applied to the far/backside of the assembly.

(2) Carefully pull the damaged insulation away from the aircraft structure.

(3) Remove all foreign objects from the area including particles of insulation.

WARNING

PVC plastic tape (PN P5113-2) shall not be used. This tape produces highly toxic fumes when hot or burned, resulting in severe injury to personnel.

NOTE

Tape shall overlap the insulation assembly edges and structure by a minimum of 0.38-inch.

(4) Repair the damaged insulation cover (PN P5115NA-4) with polyester tape (PN 5115-200-4) to seal up the insulation and increase the thickness of the abrasion cover.

(5) Edge seal the insulation cover using polyester tape (PN P5115-200-4).

(6) Apply two-sided adhesive tape (PN P5114-4-32) to far/backside, if applicable.

(7) Reinstall any equipment removed and perform system checkout as required.

c. Replacement.

(1) Remove applicable equipment to facilitate repair.

(2) Remove damaged insulation assembly.

(3) Remove all foreign objects from the area including particles of insulation.

WARNING

PVC plastic tape (PN P5113-2) shall not be used. This tape produces highly toxic fumes when hot or burned, resulting in severe injury to personnel.

(4) Position the replacement insulation assembly against the aircraft structure with proper position.

NOTE

Tape shall overlap the insulation assembly edges and structure by a minimum of 0.38-inch.

(5) Apply tape (PN P5115-200-4) across insulation assembly and structure in a manner that will contain the assembly and prevent foreign objects from being entrapped under or between the edges and contacting structure.

(6) Reinstall any equipment removed and perform system checkout as required.

2.12 LIGHTED PANEL SCRATCHES.

WARNING

- Ethyl alcohol is flammable and toxic. Avoid eye contact and prolonged breathing of vapors. Use only in a well-ventilated area. Goggles are required to prevent injury to personnel.
- Urethane paint is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

Scratches on the surface and chips on the edges of lighted panels are primarily caused by pilots' checklist binders and mechanics' tools and contact with other panels removed during maintenance. Care must be used by personnel while in the cockpit to reduce amount of damage. To repair scratches and chips, clean the damaged area with Fed. Spec O-E-760 ethyl alcohol applied with a soft lint-free cloth. A coating of MIL-C-83286B urethane paint is applied with a camel's-hair brush. The coating thickness shall be adequate to prevent significant light bleed-through. The flat, black color is FED-STD-595, number 37038.

2.13 FUEL TANK LEAKAGE.

The purpose of this section is to provide instructions for classifying fuel leaks. It is important that each fuel leak be carefully evaluated to differentiate between those leaks which constitute a flight safety hazard and those for which repair can be postponed until the aircraft is grounded for other maintenance. The method to be used in classifying leaks is the

observation of the size of the wetted area over a given period of time.

2.13.1 Fuel Tank Leakage Classification Procedure. (Refer to TO 1-1-3.)

2.14 FLUID INSERT ADAPTERS.

Fluid insert adapters are used in a number of hydraulic and pneumatic applications. The adapter provides a male fitting end to mate with lip seal connectors on tube assemblies. A serrated lockring arrangement prevents the adapter from turning when mating lines are attached or removed. The fluid adapters will be removed and installed with the aid of tool kits, part number KM9RF 500( )DW.

2.14.1 Adapter Removal. Procedures for removal of adapter:

a. Select the proper size removal tool from Table 2-11.

b. Slide the removal tool sleeve up to allow the puller halves to spread apart. (See Figure 2-17, detail A.)

c. While holding the puller halves apart, place the removal tool over the adapter so the nylon pad rests on the top surface of the adapter.

d. Release the puller halves and locate in the adapter lockring grooves. Adjust the removal tool bolt as required to obtain proper location. Slide the removal tool sleeve down over the puller halves (Figure 2-17, detail B) and check for proper engagement in the adapter lockring groove.

e. With one hand, place a wrench on the removal tool bolt-head and turn in a clockwise direction while keeping the sleeve from turning with the other hand. Continue turning the bolt until the adapter lockring serrations are lifted clear of the boss face.

f. Remove the removal tool from the adapter by loosening the bolt, lifting the sleeve, and spreading the puller halves to disengage the lockring.

g. Select the proper size installation tool from Table 2-11.

h. Place the installation tool, with the serrations down, over the adapter and engage the installation tool serrations with the adapter lockring serrations. See Figure 2-18 for installation tool illustration.

i. Place a wrench on the installation tool and turn in a counterclockwise direction to remove the adapter from the port.

Table 2-11. Adapter Tools.

TUBE SIZE	ADAPTER CONTROL NO.	INSTALLATION TOOL WRENCHING & LOCKING DRIVE TOOL VENDOR CODE IDENT 83324	INSTALLATION TORQUE INCH-POUNDS		REMOVAL TOOL VENDOR CODE IDENT 83324
			MIN	MAX	
0.250	C7579-4	RF5004DW	50	65	RF5004LPD
0.375	C7579-6	RF5006DW	140	200	RF5006LPD
0.500	C7579-8	RF5008DW	270	375	RF5008LPD
0.625	C7579-10	RF5010DW	620	700	RF5010LPD
0.750	C7579-12	RF5012DW	855	945	RF5012LPD
1.000	C7579-16	RF5016DW	1140	1260	RF5016LPD
1.250	C7579-20	RF5020DW	1520	1680	RF5020LPD

2.14.2 Adapter Installation. Procedures for installation of adapter:

a. Install O-ring on adapter. See Figure 2-19 for O-ring location.

WARNING

Zinc chromate primer is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

b. Apply a sparing amount of Fed. Spec TT-P-1757 zinc chromate primer to port counterbore area, including serrations. Apply primer with a small brush or syringe. Do not allow primer to dry before installing adapter and do not allow wet primer to contact the O-ring.

WARNING

Hydraulic fluid and lubricating grease are flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

c. Lubricate the small thread end of adapter with MIL-H-5606 hydraulic fluid for hydraulic assemblies or MIL-G-4343 pneumatic grease for pneumatic assemblies and screw by hand into port clockwise until seated.

NOTE

Do not rotate adapter counter-clock wise after it has been seated to avoid possible damage to O-ring.

d. Select the proper size installation tool from Table 2-11.

e. Place the installation tool, with the serrations down, over the adapter and engage the installation tool serrations with the adapter lockring serrations. See Figure 2-18 for installation tool illustration.

f. Place a torque wrench on the installation tool and turn in a clockwise direction until the corresponding minimum torque is obtained.

g. Observe the relationship between the adapter lockring serrations and the serrations in the port. If the serrations are not aligned, continue turning slowly in a clockwise direction, toward the corresponding maximum torque, until the lockring and port serrations are aligned. Alignment will normally take place between 3 and 8 degrees of turning and may be obtained before maximum allowable torque is reached.

h. Remove the torque wrench and installation tool from the adapter.

i. Turn the installation tool over, so the serrations are up, and screw clockwise over adapter (by hand) until the installation tool is in contact with the adapter lockring.

j. Place a wrench on the installation tool and turn clockwise until the lockring is seated in the boss.

NOTE

Any sudden increase in torque prior to seating may indicate the lockring and port serrations are not properly aligned. In such case, lift the lockring away from the port per (ADAPTER REMOVAL (2.14.1)), 2.14.1 Step a through 2.14.1 Step f; then realign the serration and install lockring per (ADAPTER INSTALLATION (2.14.2)), 2.14.2 Step e through 2.14.2 Step j.

k. Remove the wrench and installation tool and any excess primer from boss face.

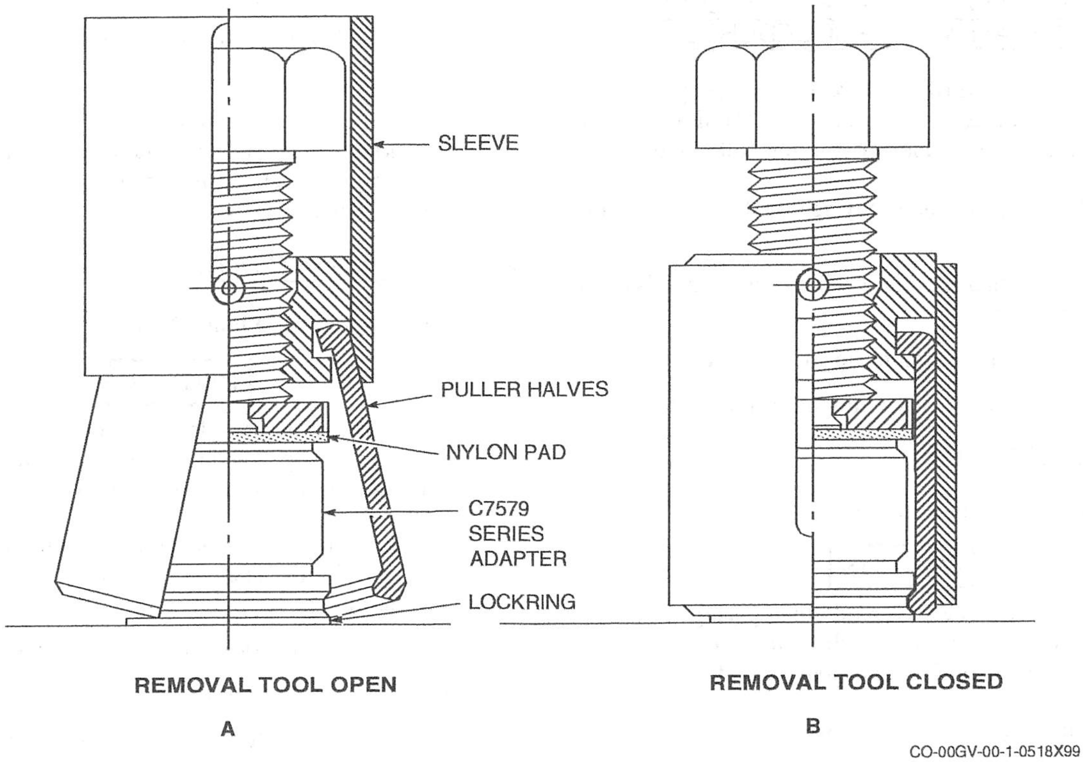


Figure 2-17. Removal Tool.

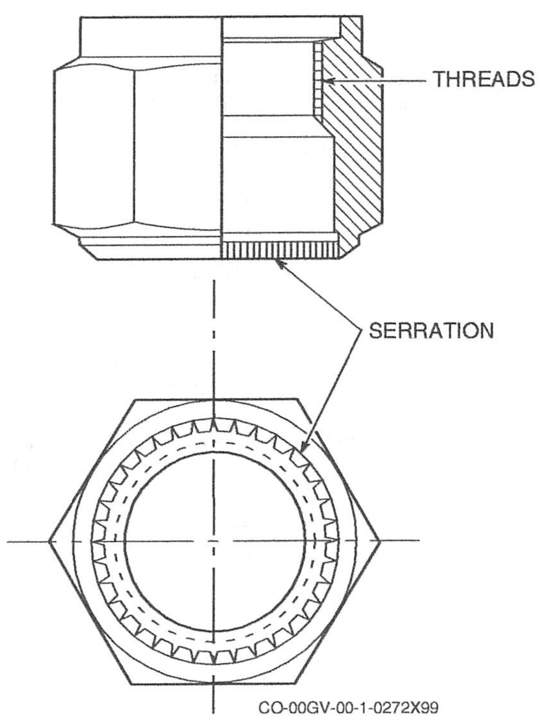


Figure 2-18. Installation Tool.

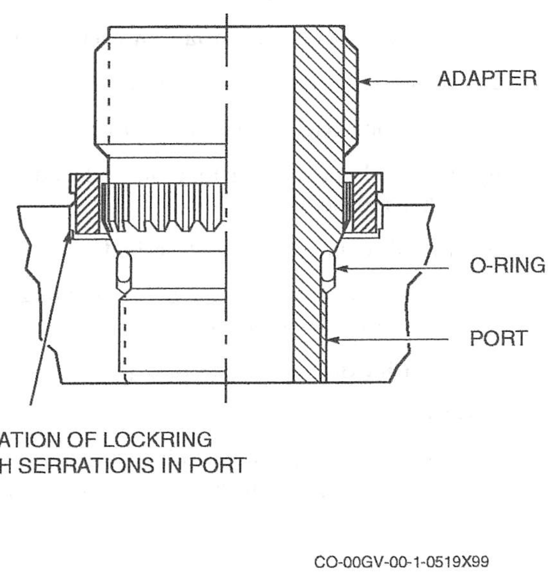


Figure 2-19. O-Ring Location.

2.15 FLEXIBLE COUPLING (FUEL AND ECS) REMOVAL AND INSTALLATION PROCEDURES.

There are currently two different type flexible couplings used on F-16 aircraft. These, the Wiggins and Hydraflow couplings, are interchangeable and provide the following:

a. Clamshell retainer assembly removal and installation by hand.

b. Integral electrical bonding which eliminates bonding clamps and wires.

c. Allows tube displacement up to 4 degrees.

d. Locking features which eliminate safety wire.

2.15.1 Wiggins Coupling.

a. Removal. (See Figure 2-20.)

CAUTION

Do not use a screwdriver or other prying device to open locking tab latch spring. Damage to the flexible coupling and tubing could result.

(1) Using finger pressure, push locking tab to unlock position.

(2) Using finger/hand pressure, open latch.

(3) Remove latch spring from the coupling hook for removal.

b. Installation. (See Figure 2-20.)

(1) Lubricate seals and install on each ferrule.

(2) Install body over other ferrule.

(3) Pull body back over other ferrule.

(4) Using slight rocking motion, pull body back over other ferrule.

(5) Install retainer assembly on body.

(6) Engage latch spring on hook coupling and close locking tab to lock position.

(7) Push locking tab to the lock position.

c. Inspection.

(1) Inspect latch assembly to insure that hinge pins are securely staked, rivets are tight, and there are no cracks evident.

(2) Verify locking tab is seated in notch by pulling up on latch. Properly seated tab will not allow latch to raise.

NOTE

Locking tab is spring loaded and, when latch assembly is locked, the tab will seat in a notch on the latch.

2.15.2 Hydraflow Coupling.

a. Removal. (See Figure 2-21.)

CAUTION

Do not use a screwdriver or other prying device to open pawls on the latch. Damage to the flexible coupling and tubing may result.

(1) Lift three pawls of the latch simultaneously, which permits the clamshell assembly to spring open for removal.

(2) Slide body back onto one end of ferrule.

(3) Remove O-ring seal.

(4) Remove body and other O-ring seal.

b. Installation. (See Figure 2-20 and Figure 2-21.)

(1) Inspect latch assembly to insure that hinge pins are securely staked, rivets are tight, and there are no cracks evident.

(2) Lubricate O-ring seals and install on each ferrule. (Refer to O-RING INSTALLATION (2.3).)

(3) Install body over ferrule.

(4) Using slight rocking motion, pull body back over other ferrule.

(5) Install retainer assembly on body.

c. INSPECTION.

(1) Press each latch pawl down separately and assure that each is down and seated.

(2) Visually inspect to see that all three latch pawls are at the same level relative to the clamp body.

NOTE

All three pawls shall be engaged.

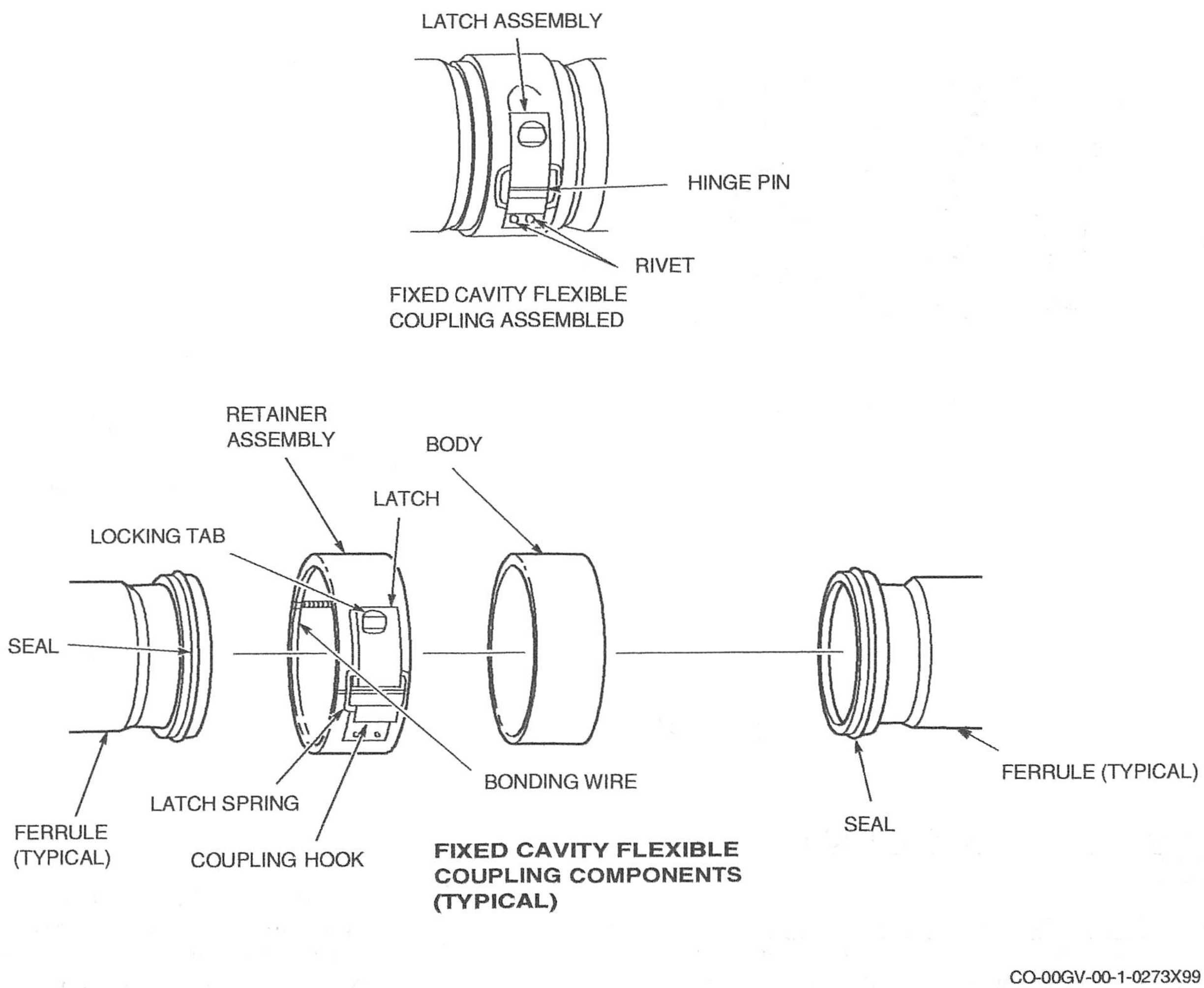


Figure 2-20. Wiggins Coupling.

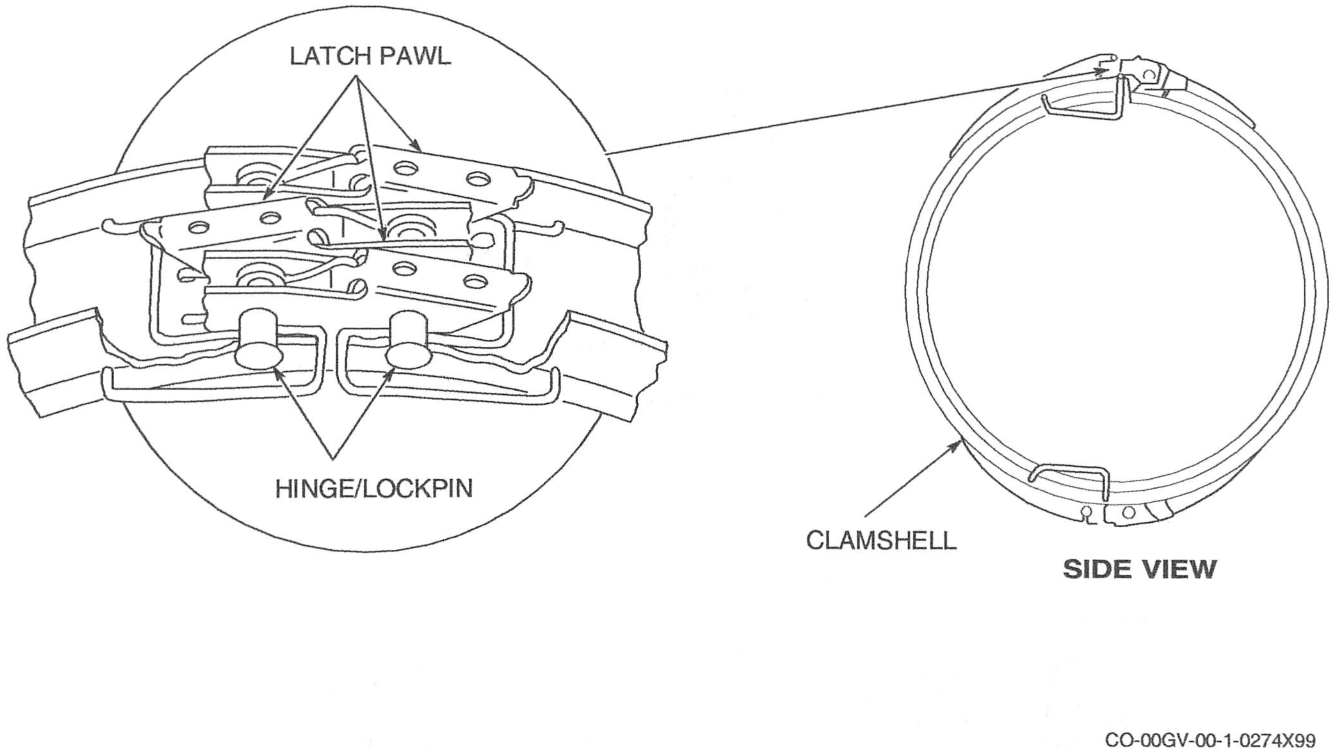


Figure 2-21. Hydraflow Coupling.

2.16 REMOVAL AND INSTALLATION OF PANEL FASTENERS.

2.16.1 C9537-Type (Tridair) Fasteners. The tridair C9537-type fasteners are used in various locations throughout the aircraft for fastening doors and attaching panels. The C9537 system consists of the stud bolt, retaining ring, wire form spring, grommet, nut, nut base (on C9537-4 only), and basket (Figure 2-22). Removal and installation will be accomplished with the aid of tool kit, part number CA21038K-100.

2.16.1.1 Stud Bolt Removal and Installation.

a. Removal.

(1) Slide retaining ring up stud bolt retaining slots and out of the way.

(2) Using blade end of tool, part number CA21037-T12, depress wire for spring into stud bolt lightening hole.

NOTE

It is not necessary to completely remove the wire form spring to remove the stud bolt. Unless it is desired to remove the wire form spring, 2.16.1.1 Step a(3) may be omitted.

(3) Insert blade end of tool, part number CA21037-T12, into end of stud bolt lightening hole, hook wire form spring, and withdraw.

(4) Slide retaining ring down stud bolt to crossover slots, rotate fully counterclockwise, and withdraw.

(5) Withdraw stud bolt from panel.

b. Installation.

(1) Insert stud bolt through panel and hold in place.

(2) Install retaining ring on stud bolt by aligning retaining ring ears with stud bolt installation slots, slide up to crossover slots, rotate fully clockwise, and slide up bolt.

NOTE

If wire form spring was not removed from the stud bolt, omit 2.16.1.1 Step b(3).

(3) Insert U-shaped spring end of wire form spring into end of stud bolt lightening hole and press in fully with thumb.

(4) Using slotted end of tool, part number CA21037-T12, fully insert wire form spring into stud bolt lightening hole and rotate until clip pops up through bolt slot.

2.16.1.2 Grommet Removal and Installation.

a. Removal.

(1) Remove stud bolt from panel in accordance with the above paragraph.

(2) Install appropriate size removal tools CA21038-( )-T13 and CA21038-( )-T14 in grommet as shown in Figure 2-23.

(3) Using appropriate size wrenches, screw removal tools together until grommet is forced out of panel.

(4) Remove removal tools.

b. Installation.

WARNING

Sealing compound is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

(1) Apply MIL-S-83430 sealing compound to grommet flange and panel countersink.

(2) Install grommet and appropriate size installation tools CA21038-( )-T15 and CA21038-( )-T16 as shown in Figure 2-24.

(3) Using appropriate size wrenches, screw installation tools together until grommet is flared to fit panel countersink.

(4) Remove installation tools.

(5) Inspect flared grommet. If flared grommet extends beyond contour, it shall be milled flush. It is permissible for the flared grommet to be a maximum of 0.020-inch below contour.

(6) Install stud bolt in panel in accordance with paragraph 2.16.1.1 Step b.

2.16.1.3 Nut and Nut Base (C9537-4 Only) Removal and Installation.

a. Removal.

(1) Select appropriate size nut removal tool.

(2) Insert nut removal tool between nut and cage straddling one lug. (Refer to Figure 2-25.)

(3) Apply downward pressure on nut removal tool handle to spring cage and pop nut out.

(4) Repeat steps 2.16.1.3 Step a(2) and 2.16.1.3 Step a(3) for removal of nut base for C9537-4 series only.

b. Installation.

(1) Nut base (C9537-4 only).

NOTE

Nut base shall be installed before nut.

(a) Turn nut base so flat side is down.

(b) Tilt nut base to one side and insert nut base lug in cage receptacle.

(c) Align opposite nut base lug directly over cage receptacle and, using nut removal tool handle, force lug straight down until it snaps into cage receptacle.

(2) Nut.

(a) Tilt nut to one side and insert nut lug in cage receptacle.

(b) Align opposite nut lug directly over cage receptacle and, using nut removal tool handle, force lug straight down until it snaps into cage receptacle.

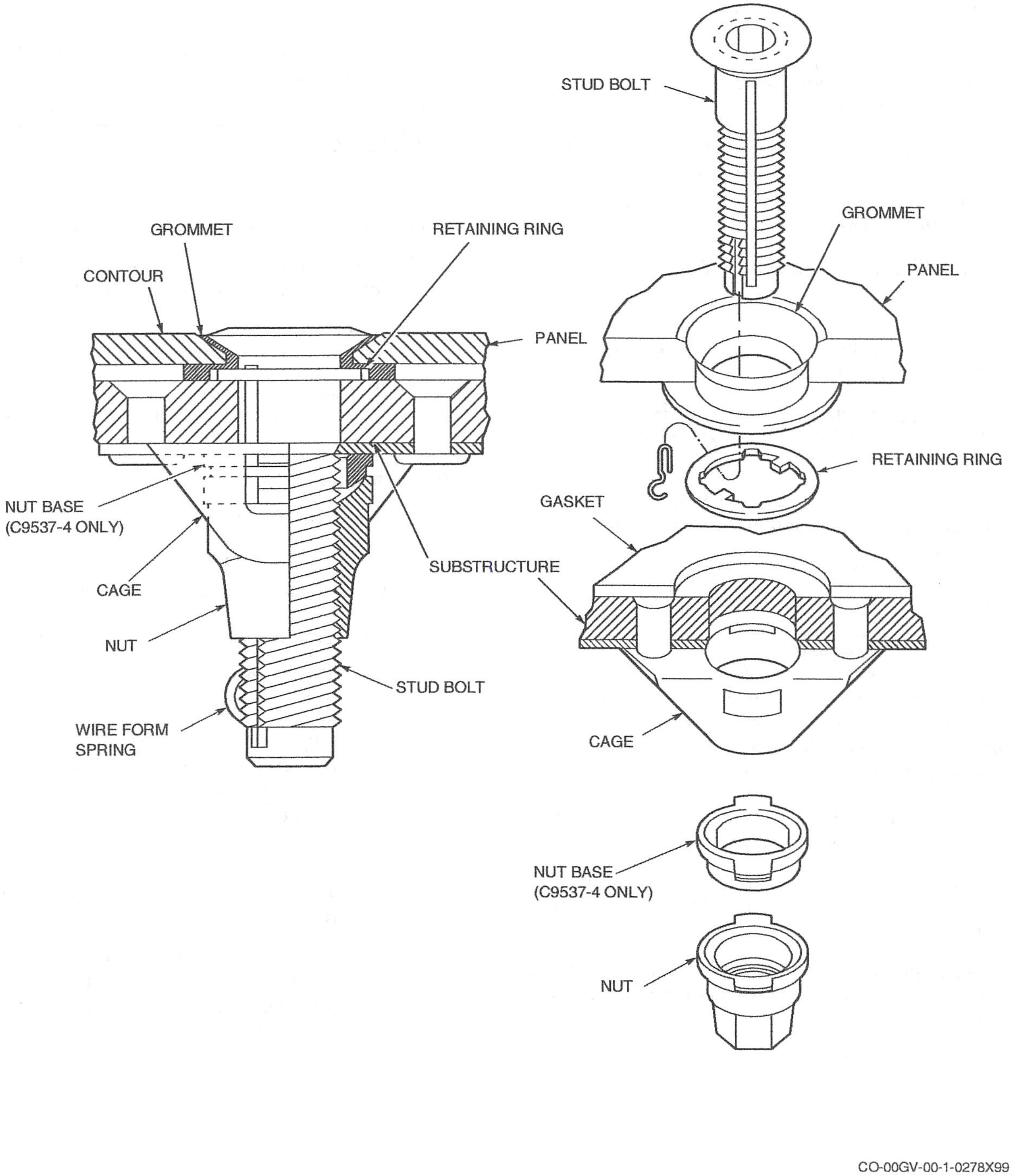


Figure 2-22. C9537 (Tridair) Fastener.

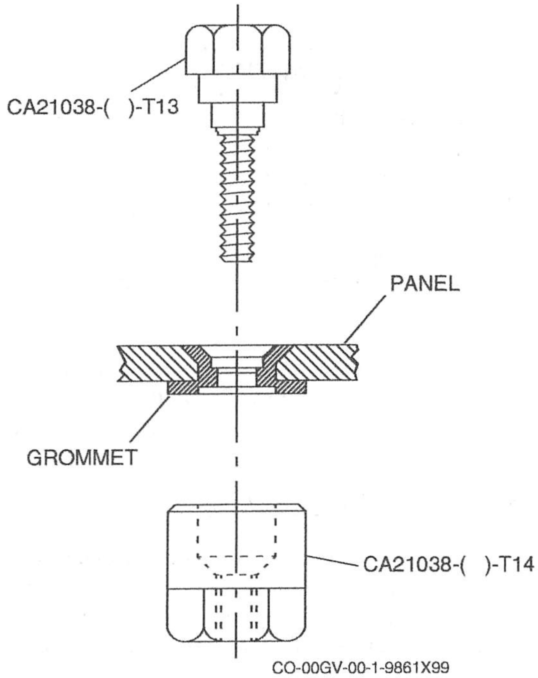


Figure 2-23. Grommet Removal.

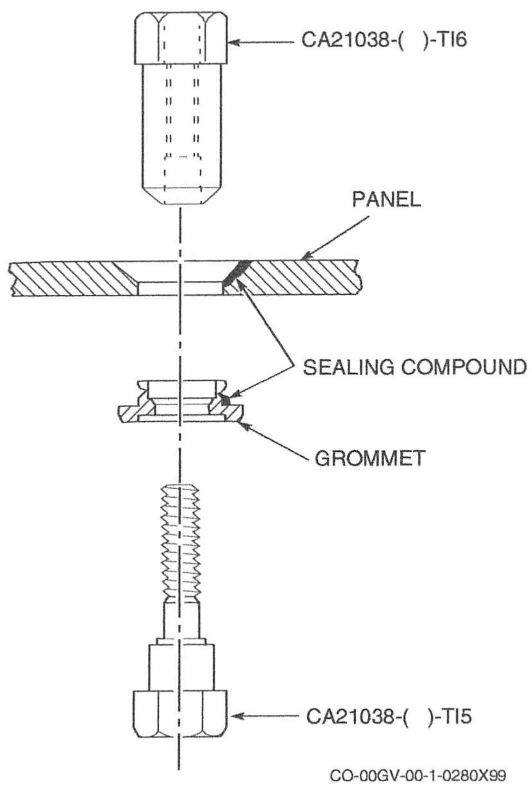


Figure 2-24. Grommet Installation.

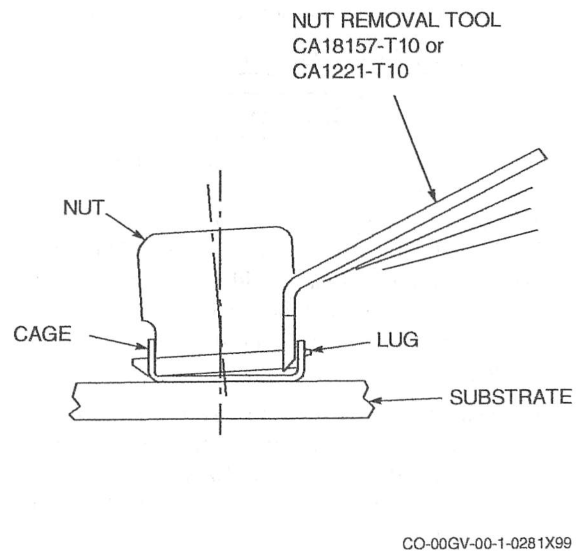


Figure 2-25. Nut Removal.

2.17 COLD WEATHER PRECAUTIONS.

CAUTION

- Antiicing fluid (MIL-A-8243) shall not be used on any cockpit transparencies. Failure to observe this caution may result in damage to transparencies.
- Do not use electrical immersion heaters to heat anti-icing fluid (MIL-A-8243). The high surface temperatures of the element may cause decomposition of the anti-icing fluid in contact with the element.

a. The safety precautions and procedures for the prevention and removal of frost, snow, and ice set forth in TO 42-C-1-2 shall be followed. The use of anti-icing fluid (MIL-A-8243) is acceptable for deicing all aircraft surfaces except canopy transparency.

CAUTION

Isopropyl alcohol in concentrated form will damage the solar coating on Sierracin manufactured transparencies (PN 163200-51, 163400-51, 183100-51, and 183300-51). The isopropyl alcohol shall be diluted with one part water to one part alcohol. Failure to observe this caution may result in damage to transparency.

b. After the deicing/defrosting operation has been completed, the polycarbonate transparency shall be wiped

with clean wiping towel (Fed. Spec UU-T-598) or flannel (Fed. Spec CCC-F-458) moistened with 50 percent solution of isopropyl alcohol (MIL-I-37443).

2.18 TRANSPARENCY DEICING.

CAUTION

- Isopropyl alcohol in concentrated form will damage the solar coating on Sierracin manufactured transparencies (PN 163200-51, 163400-51, 183100-51, and 183300-51). The isopropyl alcohol shall be diluted with one part water to one part alcohol. Failure to observe this caution may result in damage to transparency.
- Transparency is plastic and easily damaged by scratching or by contact with solvents. use only material specified in TO 1F-16( )-2-12JG-00-1. Failure to comply may result in damage to transparency.

a. Using application bottle containing a 50-50 mixture of isopropyl alcohol (MIL-I-37443) and water, thoroughly wet inside of transparency until frost/ice is completely dissolved.

CAUTION

- Cheesecloth will collect abrasive materials from the transparency surface during cleaning process. Freely discard contaminated cheesecloth to prevent transparency damage.
- Do not attempt to remove frost/ice by rubbing vigorously or damage to the transparency may result.

b. Wipe transparency dry with cheesecloth (Fed. Spec CCC-C-440 or DDD-C-301) using long, straight strokes. Turn cheesecloth after each stroke and discard when used or contaminated.

2.19 SAFETY STREAMER AND PIN.

Red safety streamer and pin shall be standardized as outlined in Figure 2-26. A metal ring shall attach the streamer to the safety pin, preventing loss of the pin, attaching ring, or streamer and eliminating a foreign object and safety hazard.

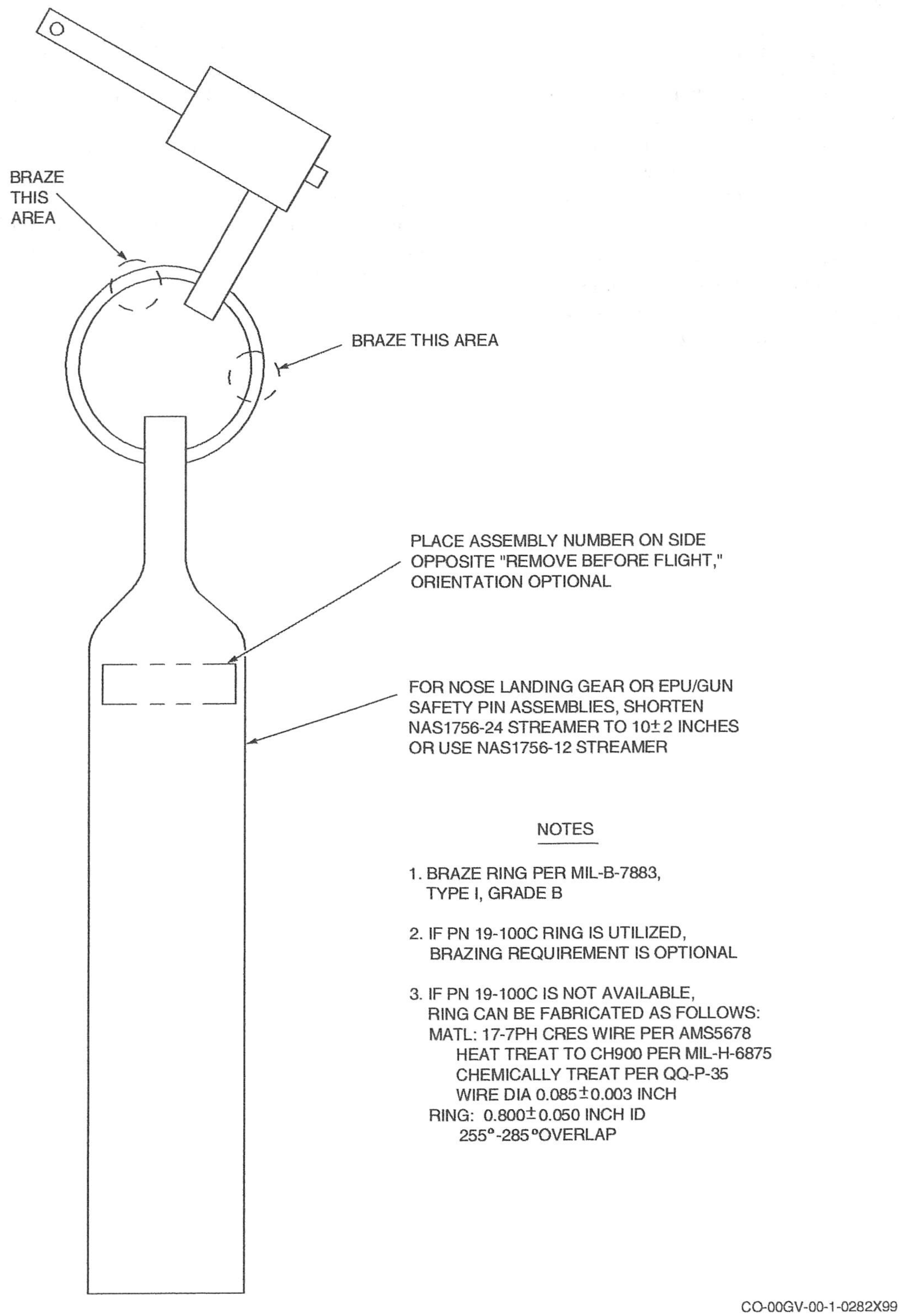


Figure 2-26. Safety Streamer and Pin.

2.20 DRAIN HOLES.

WARNING

- Personnel shall be familiar with and observe all safety precautions pertaining to handling hydrazine fuel as described in TO 1F-16( )-2-49GS-00-1. Failure to comply may result in injury to or illness of personnel from contact with hydrazine.
- Any leakage or pools under the aircraft in drain areas shall be handled as hydrazine. Failure to comply may result in injury or death to personnel from contact with hydrazine.

NOTE

On item 10 of Table 2-12, remove plug and allow 2 minutes for fluid to drain before measuring leakage for a 1-minute period.

The undersurface of the aircraft contains numerous drain holes. Condensate drain holes are identified and located in Figure 2-27. Condensate holes shall be kept open at all times to maintain unobstructed moisture drain provisions. Exterior drains, vents, and ports are located in Figure 2-28, and drainage is identified in Table 2-12.

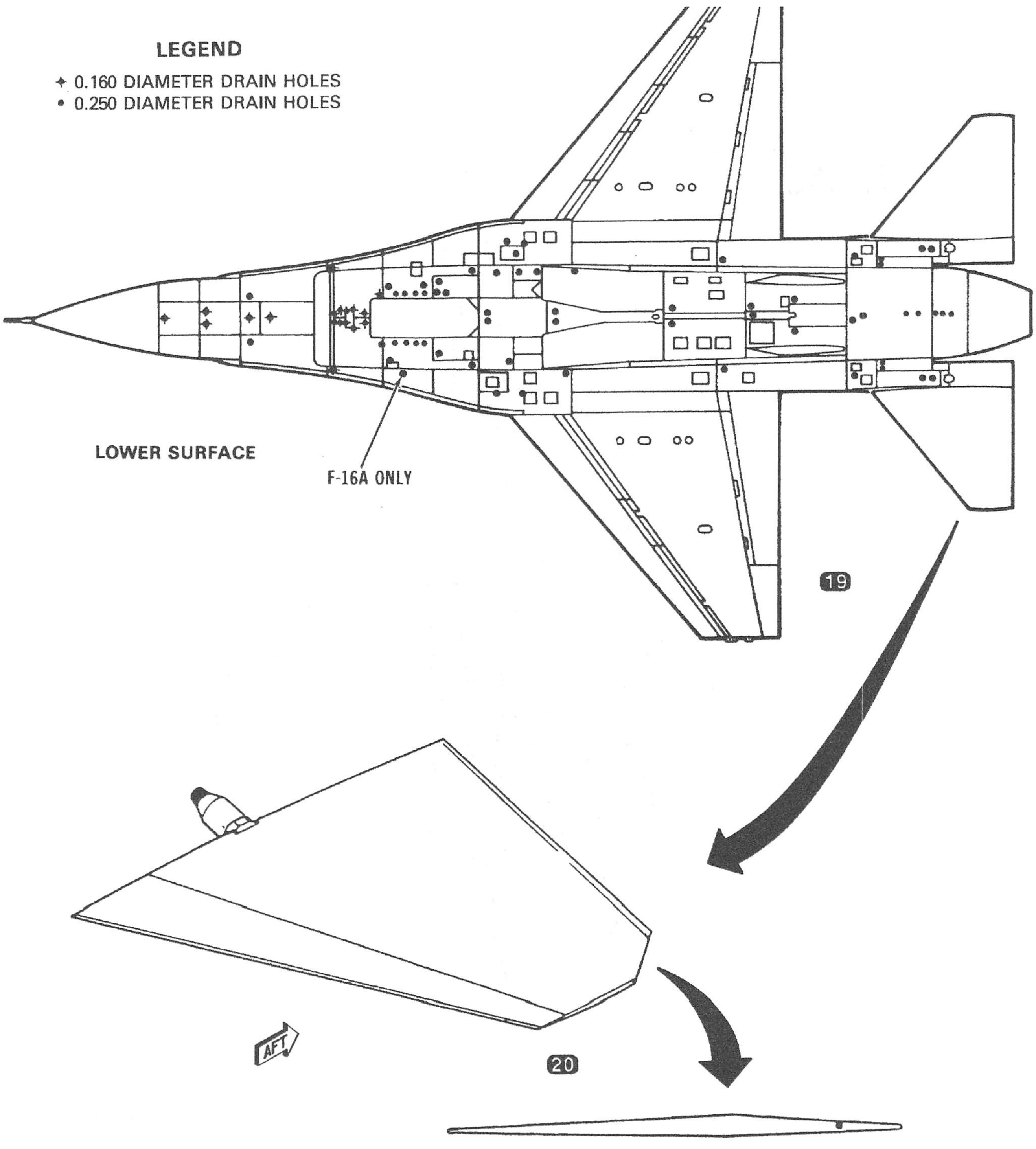


Figure 2-27. Condensate Drain Hole Locations.

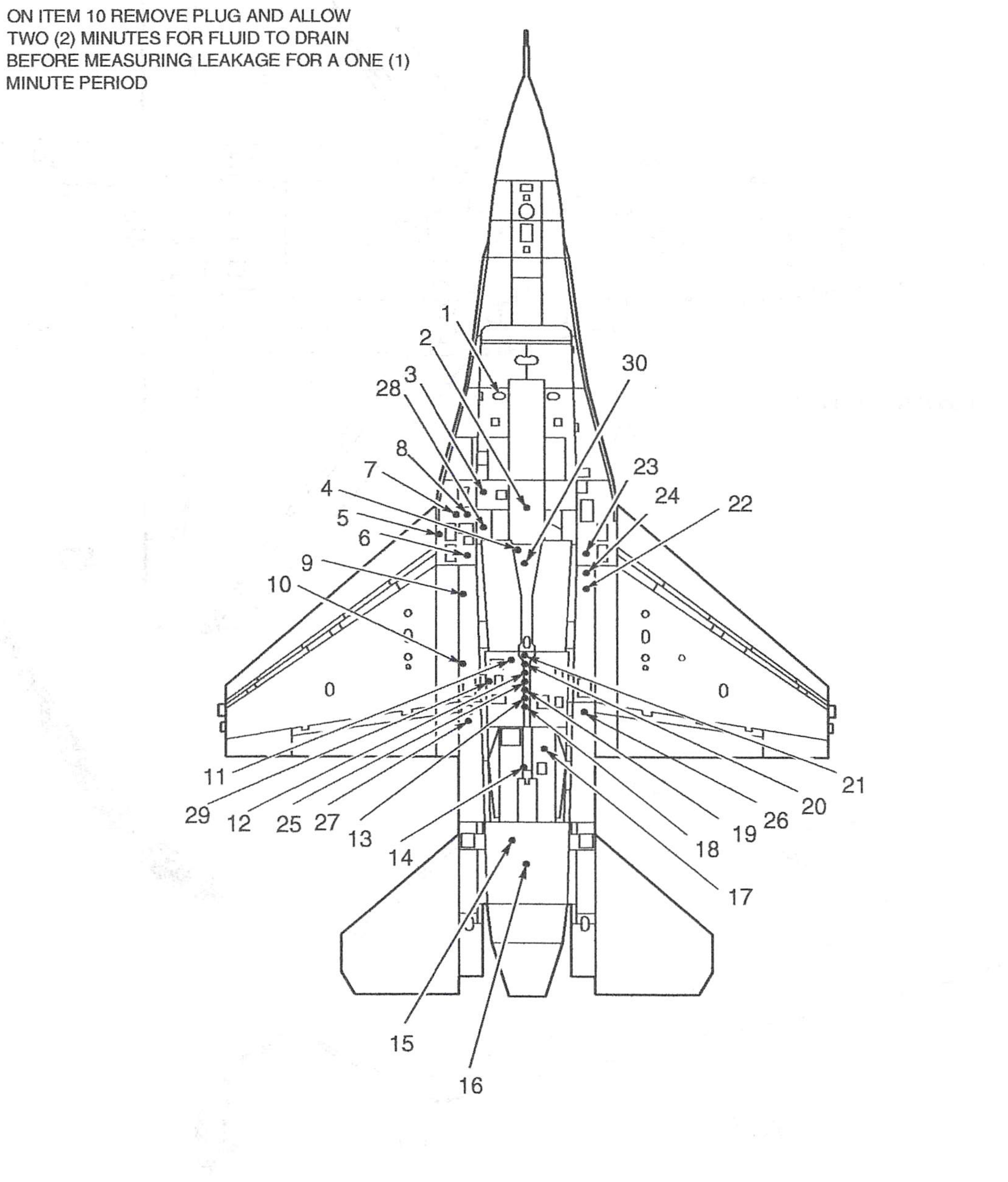


Figure 2-28. Exterior Drains, Vents, and Ports Location.

Table 2-12. Drain Holes Drainage.

INDEX NUMBER	LEAK SOURCE UNIT	DRAINAGE	MAXIMUM ALLOWABLE DRAINAGE/ LEAKAGE
1	F1 Fuel Tank	Fuel	0
2	Liquid Oxygen Converter	LOX	No max limit
3	ECS Heat Exchanger	Water	No max limit
4	EPU	Hydrazine	0
5	EPU Relief Valve	Hydrazine	0
6	Hydraulic Reservoir	Hydraulic	0
7	Leading Edge Flap Power Drive Unit Bay	Hydraulic/Oil	0
	Leading Edge Flap Power Drive Unit Motors Shaft Seal (2)	Hydraulic/oil	17 drops/5 min
	Emergency Power Unit Gearbox	Oil	0
	Emergency Power Unit Pump Shaft Seals	Hydraulic	1 drop/2 min
8	Hydrazine Cavity Rain Drain	Water	No max limit
9	*Air Refuel Well	Fuel	1 drop/5 min (fuel) from IFR rcpt, 0 all other sources
10	Fuel Flow Proportioner Shaft Seal	Fuel/Hydraulic	20 drops/min (fuel) 2 drops/min (hyd)
11	***Right Hydraulic Pump Cavity	Hydraulic/Oil	5 cc max/hr(hyd/oil)
12	***Constant-Speed Drive	Oil	5 cc/hr
13	***Power Takeoff Shaft Seal Cavity	Oil	5 cc/hr
14	*Front Fuel/Oil Drain Manifold	Fuel/Oil	**
15	*Rear Fuel Drain Manifold	Fuel	**
16	Engine Exhaust Nozzle Control	Air	**
17	*Engine Gearbox Breather	Oil	**
18	JFS Starter Combustor	Fuel	No fuel overboard during start
19	***Left Hydraulic Pump Cavity	Hydraulic/Oil	5 cc max/hr(hyd/oil)
20	***Jet Fuel Starter Motor Shaft Seal	Hydraulic/Oil	5 drops/start (hyd), 5 cc/hr (oil)
21	***Fuel Control Cavity	Fuel/Oil	5 cc max per start (Fuel), 5 drops max per start (Oil)
22	*Air Refuel Well	Fuel	1 drop/5 min (fuel) from IFR rcpt, 0 all other sources
23	Leading Edge Flap Bay and Gun Motor Shaft Seal	Hydraulic	10 drops/5 min
24	Hydraulic Reservoir	Hydraulic	0
25	***ADG Case Vent	Fuel/Oil	5 cc max/start (oil), 10 cc max/2 min motor, 0 (fuel)
26	*Flaperon Servoactuator	Hydraulic	0

Table 2-12. Drain Holes Drainage - Continued.

INDEX NUM- BER	LEAK SOURCE UNIT	DRAINAGE	MAXIMUM ALLOWABLE DRAINAGE/ LEAKAGE
27	*Flaperon Servoactuator	Hydraulic	0
28	Tank Compartment Drain	Hydrazine	0
29	***Standby Generator	Oil	5 cc/1 hr
30	Fuel Tank Pressurization Line, ECS Drain Line	Fuel	0

* Indicates that the external drain, vent, or port has more than one leak source.

*** 20 drops equals approximately 1 cc.

** ACFT equipped with F100-PW-200 engine. Refer to TO 1F-16( )-2-70FI-00-1. ACFT equipped with F100-PW-220/220E engine. Refer to TO 1F-16( )-2-70FI-00-21

2.21 CANOPY TRANSPARENCY POLISHING.

It is possible on service-used aircraft for the canopy transparency to become hazy. These areas will generally appear as streak marks similar to bug streaks or appear hazy in comparison to the adjacent area. Care during cleaning is required. It may be noticed that the unprotected areas become hazy during a flight through clouds containing ice, indicating the need for polishing.

2.21.1 Treatment of Transparency Surface.

CAUTION

Transparency is plastic and easily damaged by scratching or by contact with solvents. use only material specified in TO 1F-16( )-2-12JG-00-1. Failure to comply may result in damage to transparency.

Optical blemishes, scratches, etc., may occur in such a large number of combinations or possibilities that accept or reject criteria cannot be provided. Transparencies that are objectionable to the pilot for performance shall be replaced if the cleaning and polishing procedures fail to bring the unit into an acceptable condition. Initial cleaning and subsequent polishing (type I polishing) with WHIZ-LITE (12849), and MICROGLOSS (32834) shall be accomplished as directed in JG12-30-01. Type II polishing will be accomplished only if type I fails to bring unit into an acceptable condition.

NOTE

- The only polish authorized for use on the F-16 canopy transparencies is type I liquid polish as specified in GD P62142-2. Type I polish is further broken down by abrasive content into (-1) or (-2) designators. Polish (1) may be used on a daily basis. Polish (-2) is more abrasive and will only be used when polish (1) is not effective.
- PN 5602261 and PN 3MG8 are designated as (-1) polishes. They are know in the commercial world as WHIZ-LITE (12849) and MICOGLOSS (32834).
- PN 5602260 known commercially as WHIZ, is manufactured by Texstar Plastics (12848). Polish, Plastic Type I Liquid, is manufactured by AIN Plastics (2R240). Both of these polishes are designated as -2 polishes.

2.21.2 Polishing (Type II).

WARNING

Plastic polish is irritating to the eyes. Goggles are required. Failure to observe this warning may result in personnel injury.

CAUTION

- Do not use canopy cleaning materials to clean the HUD and the Pilot's Display Unit (PDU). The canopy cleaning materials are too harsh and will permanently damage the coated optics.
- Use clean, soft cloth, turning frequently. Discard when used or contaminated with any abrasive material. Transparency shall be clean before polishing. Failure to observe this caution may result in damage to transparency.

a. Shake polish well before using.

WARNING

Plastic polish is irritating to the eyes. Goggles are required. Failure to observe this warning may result in injury to personnel.

b. Apply polish liberally with clean, soft cloth and apply to transparency hazy area(s). Rub area using moderate hand pressure for approximately 30 to 60 seconds.

c. Allow the polish to dry; then wipe off the excess polish with a clean, soft cloth.

d. View the transparency. If necessary, repeat steps 2.21.2 Step a, 2.21.2 Step b, and 2.21.2 Step c.

2.21.3 Canopy Sealing Compound, PR-1425 (83574), Erosion Repair. Maintain the 2-inch (maximum) band of sealing compound around all nonvision exposed edges of the transparency exterior. This band reduces protective coating erosion and protects the holes from chemicals. If the protective band is eroded or is not present, perform the following:

WARNING

Isopropyl alcohol is flammable and toxic. Avoid eye and skin contact and prolonged breathing of vapors. Use in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

CAUTION

The area to be repaired shall be cleaned using MIL-I-37443 isopropyl alcohol and water in accordance with JG12-30-01. Failure to observe this caution may result in damage to transparency.

a. Mask off the area to be repaired to a maximum of 2 inches from the transparency edge (exterior) with 7331 (88301) polyester tape.

b. Apply a smooth coat of sealing compound.

c. Normal cure time for sealing compound is 24 hours. Temperature and humidity conditions will affect cure time. Check the sealing compound for a firm, rubbery feel.

2.22 REMOVAL AND INSTALLATION OF STATIC DISCHARGERS.

Static dischargers, standard part C180, are installed on each outboard wing trailing edge, on each stabilizer, on the rudder, and on the tip of the vertical stabilizer. Missing dischargers should be replaced as they are there for the purpose of minimizing static interference to the aircraft radio equipment. If more than one discharger is missing, static interference in the VHF and UHF radios will increase when the aircraft is flying in high static charge conditions. Each installation consists of a retainer mount, a discharger, and a cap head screw (Figure 2-29).

2.22.1 Static Discharger Removal and Installation.

a. Removal.

(1) Remove cap head screw from retainer mount. (Figure 2-29.)

(2) Remove static discharger.

b. Installation.

(1) Prepare mating surfaces for electrical bonding in accordance with paragraph STATIC DISCHARGER PROBE BONDING AND SHRINK TUBING INSTALLATION (2.22.2) for probe or CHAPTER 2, as applicable.

(2) Position static discharger in retainer mount. (See Figure 2-30.)

NOTE

Retaining compound, PN VC3 standard (3S902), can be used as a thread locking compound.

(3) Install cap head screw and tighten.

2.22.2 Static Discharger Probe Bonding and Shrink Tubing Installation. The following procedures are for probe bonding applying RTV 11/STO into probe retainer. RTV 11/STO is a flexible, quick curing silicone rubber suitable for this purpose. RTV 11 has an operating temperature range of +400°F to -65° (for reference details, see Figure 2-31; supplies (consumables) are listed in Table 2-13).

NOTE

Before bonding procedures are initiated, review electrical bonding safety precautions, paragraph ELECTRICAL BONDING SAFETY PRECAUTIONS (2.1.1).

a. Cleaning/Priming.

(1) After removing the probe from its retainer, thoroughly scrub inside of the retainer with degreaser such as isopropyl alcohol using a spiral brass cleaning brush (brass brush with a battery-operated drill or screwdriver works well). Remove all foreign matter, including aluminum oxide, with cotton tipped applicators. Use more degreaser as needed. Dry with a cotton tipped applicator.

(2) Inspect the retainer inside and out for damage. Replace the retainer if damaged.

(3) Inside the retainer mount, apply a uniform thin film of silicone primer with a cotton tipped applicator. Swab only to the setscrew hole inside the retainer, approximately 1/2-inch. Allow the primer to dry 5 minutes or more.

(4) The aluminum portion of the probe shall have all foreign matter, including aluminum oxide, removed with a plastic scrub pad. Thoroughly clean the probe with degreaser using a cotton wipe. Clean several times using a new wipe with degreaser until the wipe is clean after wiping the probe.

(5) When degreaser is fully evaporated, swab the probe with silicone primer using a cotton tipped applicator. Swab the probe from the cap head screw cutout along the probe shaft toward its tip, approximately 1-inch (see detail A). Allow the primer to dry 5 minutes or more.

NOTE

For maximum strength, cleaning, priming, mixing, and bonding should be one continuous operation to minimize contamination and oxidation.

b. Mixing/Bonding: With a disposable syringe, put 5 cc (1 tsp) of RTV 11 silicone rubber compound into a 1-ounce plastic cup. With a dropper, add two drops of Stannous Octoate (STO) and mix thoroughly for 1 minute with the wood end of a cotton tipped applicator. Spread a generous amount of mixed RTV 11/STO on primed surface of the probe. Rotate the probe into retainer until seated. Wipe excess RTV off around the probe with a suitable device. Probe shall be seated within 2 minutes from the start of mixing.

NOTE

Check the consistency of the RTV remaining in the mixing cup to insure a good cure of the RTV.

c. Curing Time: A minimum of 15 minutes is necessary for proceeding to the next step, application of heat-shrinkable tubing. The probe is ready for flight in 30 minutes. Complete cure takes 24 hours.

d. Application of Heat-Shrinkable Tubing. Two individual lengths of shrinkable tubing, one on top of the other, are applied to the static discharge probe. Using a heat gun (approximately 500 watts with a nozzle-mounted heat deflector), apply heat to one piece at a time, which causes each piece to shrink and draw tightly around the probe.

(1) Clean the probe surface; no dirt or oils shall be present.

(2) Cut two pieces of the shrink tube, 4.0 inches and 2.5 inches in length (detail B).

(3) Flatten both pieces. Make a diagonal cut at one end of one piece by starting the cut approximately 1/4-inch from the edge and ending the cut on the opposite edge corner (detail B). Repeat this procedure with the other piece.

WARNING

Extreme care shall be exercised when using a heat-producing device. Failure to observe this warning may cause injury to personnel and damage to equipment.

CAUTION

Application of heat longer than necessary may result in damage to components. Further heating will not cause additional shrinkage and will damage components.

NOTE

Always use the heat deflector when applying heat.

(4) Slide the 4-inch piece over the probe, as shown in detail C. The diagonal end should overlap the collar as much as possible while the tubing is being shrunk. To do this, apply a little force to the square end of the tubing while applying heat first to the diagonally cut end. After the tubing draws tight around the collar, guide the heat slowly along the rest of the length of the tubing. The tubing shrinks quickly when exposed to high heat. Uniform shrinkage should be complete in less than 1 minute (see detail B). Allow the probe to cool for 1 minute.

(5) Repeat step (2.22.2 Step d(4)) using the remaining 2.5-inch piece. This step should be completed within 30 seconds (see detail E). The final product should appear uniform as in detail F.

Table 2-13. **Supplies (Consumables) for Static Discharger Bonding.**

NOMENCLATURE	SPECIFICATION GOVT STD NO	PART NO. (MFG CODE)
Alcohol, Isopropyl	6810-00-227-0410	TT-I-735
Applicator, Cotton Tipped	6515-01-234-6838	
Brass Spiral Brush	1005-00-716-2132	
Cup, Plastic	7350-00-290-0580	
Dropper, 5 CC (medical)	6640-00-285-6069	
Pad, Scrub	7920-00-753-5242	
Silicone, Primer	MIL-A-46146B	SS4004P
Silicone, Rubber Compound	MIL-A-46146B	GE-RTV11/TSO (01139)
Syringe, Plastic (medical)	6515-00-754-0406 (01139)	
Tubing, Heat-Shrinkable	MIL-I-23053/5A	
	MIL-I-23053/4B	
	MIL-I-23053C/4B	
Wipes, Cotton, 4 x 4	3610-00-864-5585	

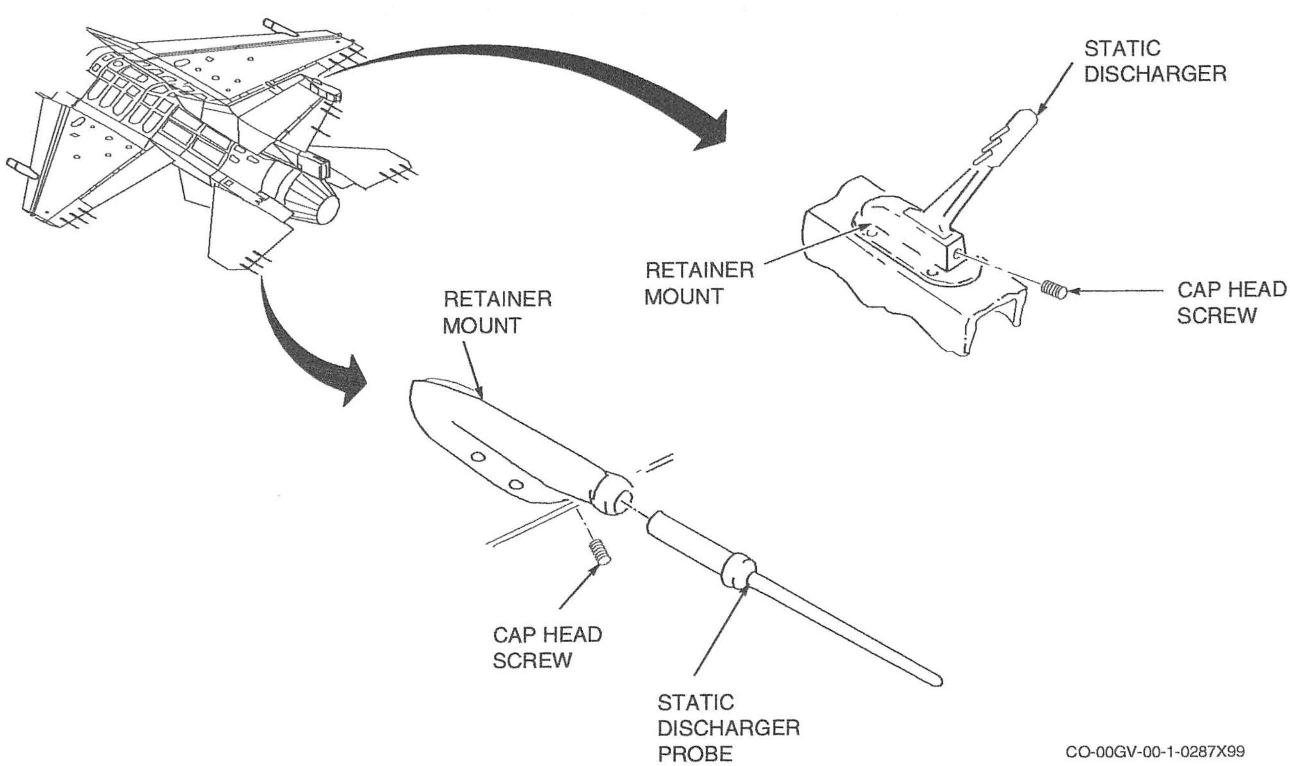


Figure 2-29. Removal of Static Discharger.

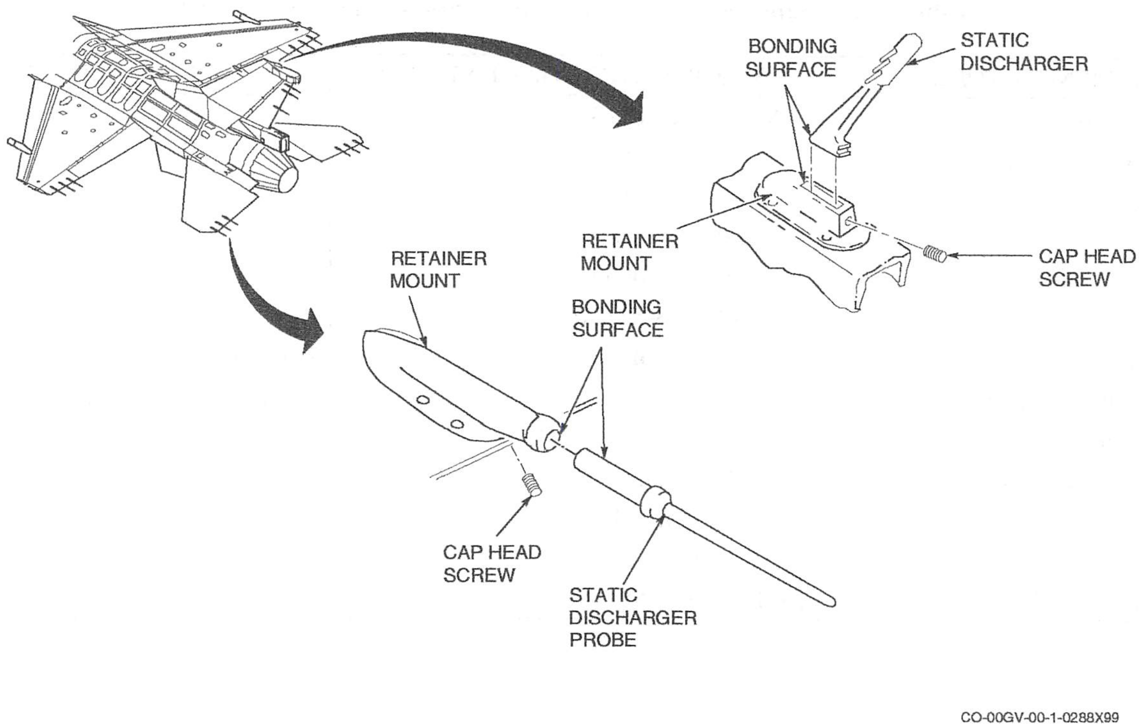


Figure 2-30. Installation of Static Discharger.

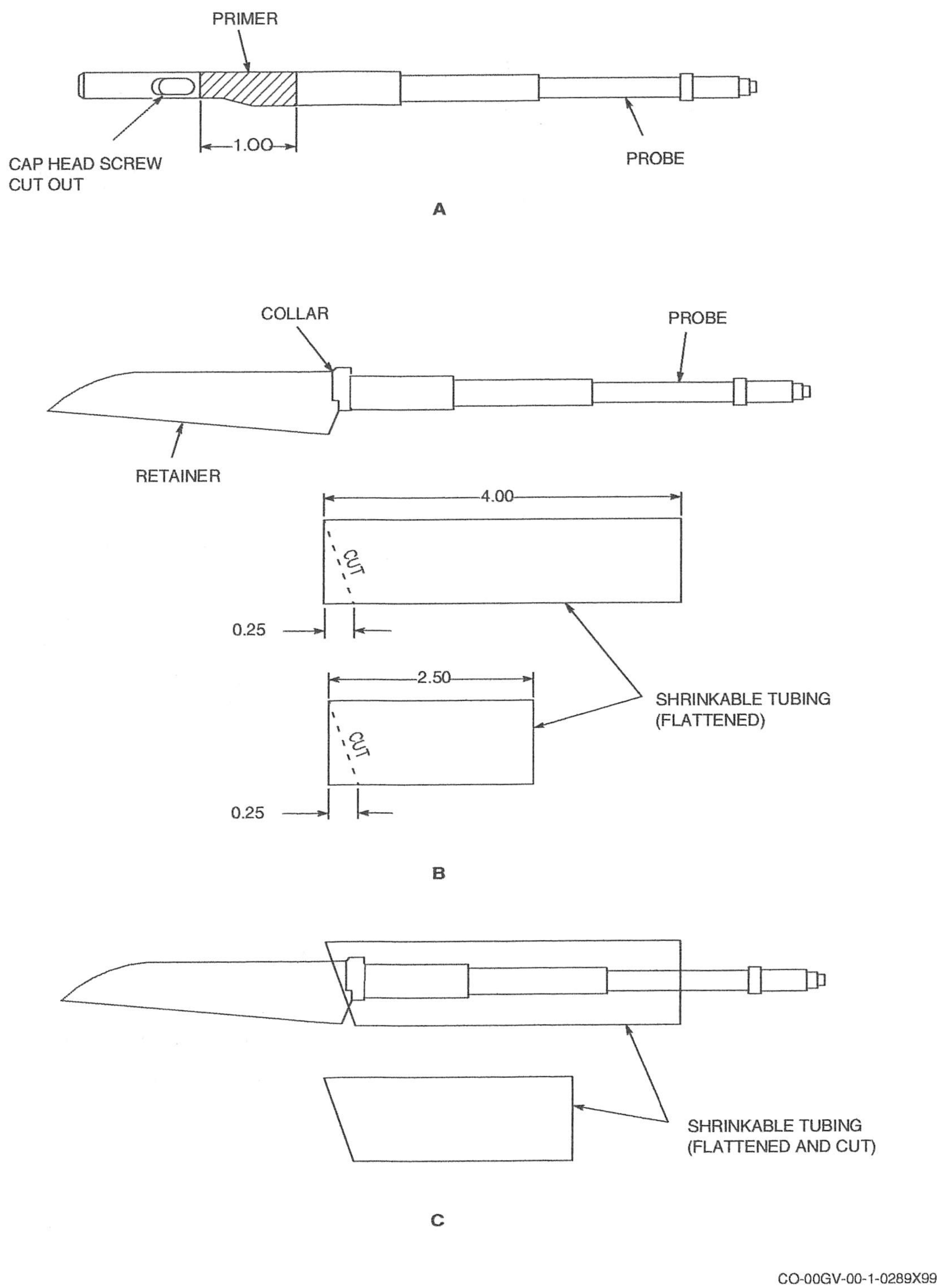


Figure 2-31. Static Discharger Probe Bonding and Shrink Tubing Installation.

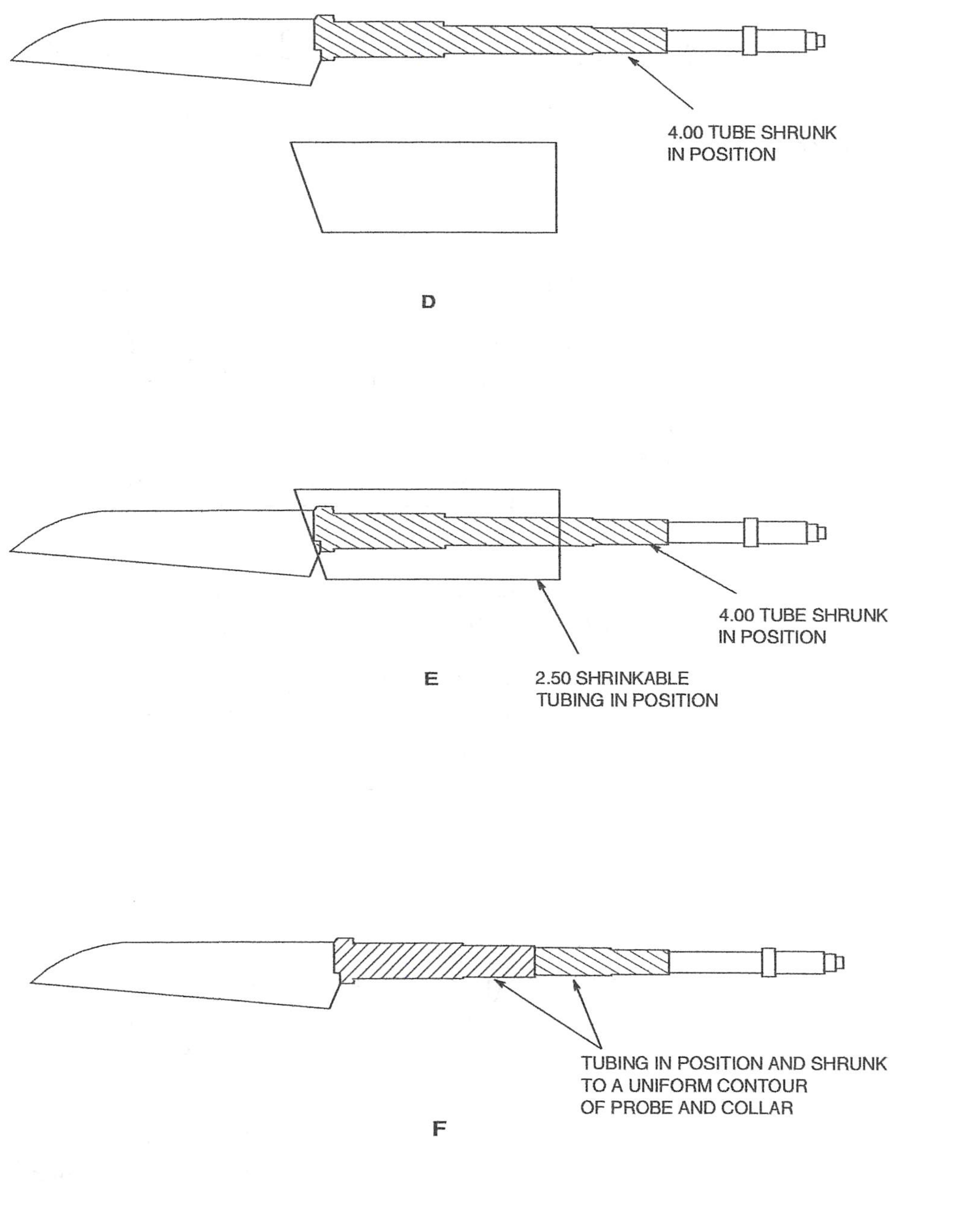


Figure 2-32. **Static Discharger Probe Bonding and Shrink Tubing Installation.**

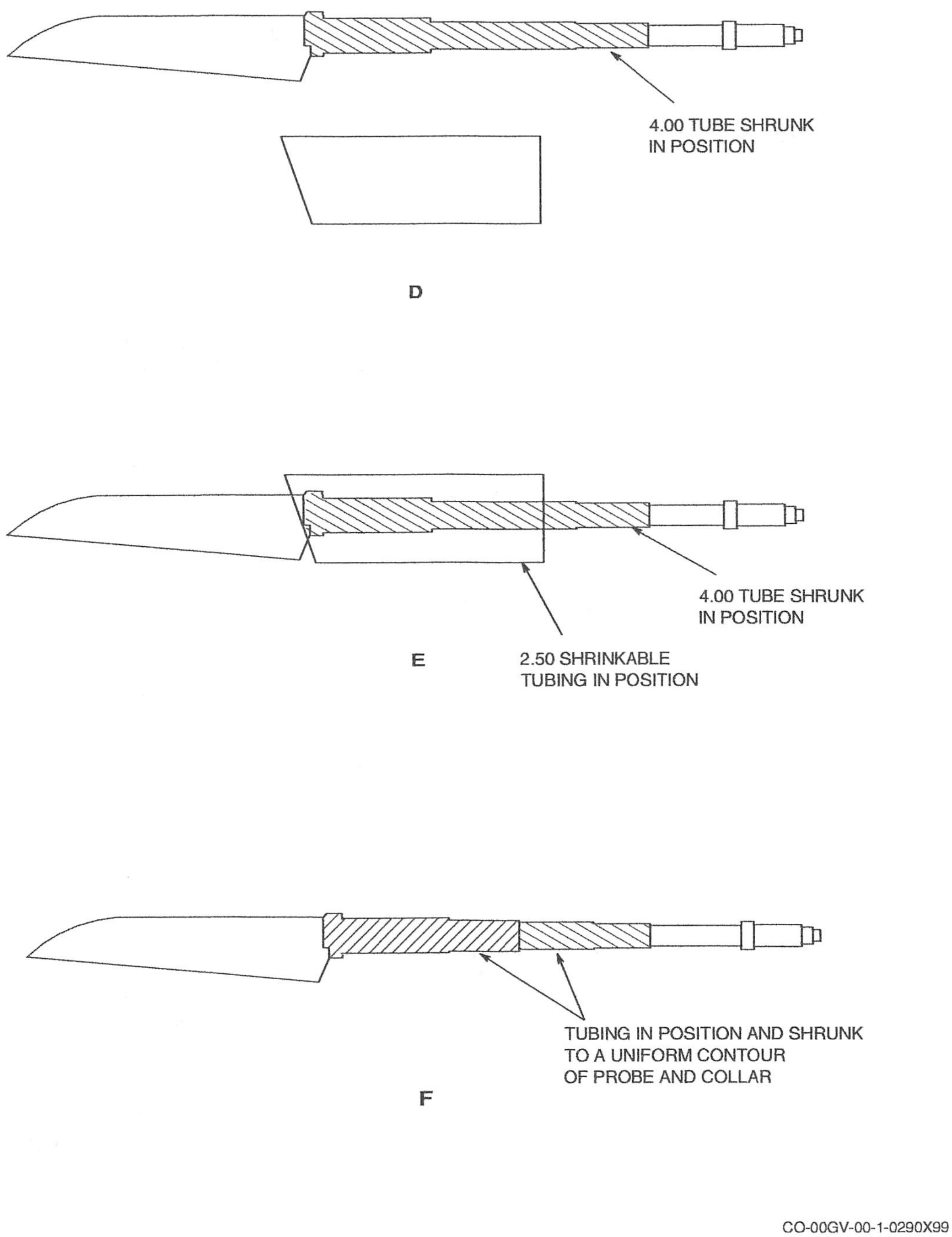


Figure 2-32. Static Discharger Probe Bonding and Shrink Tubing Installation.

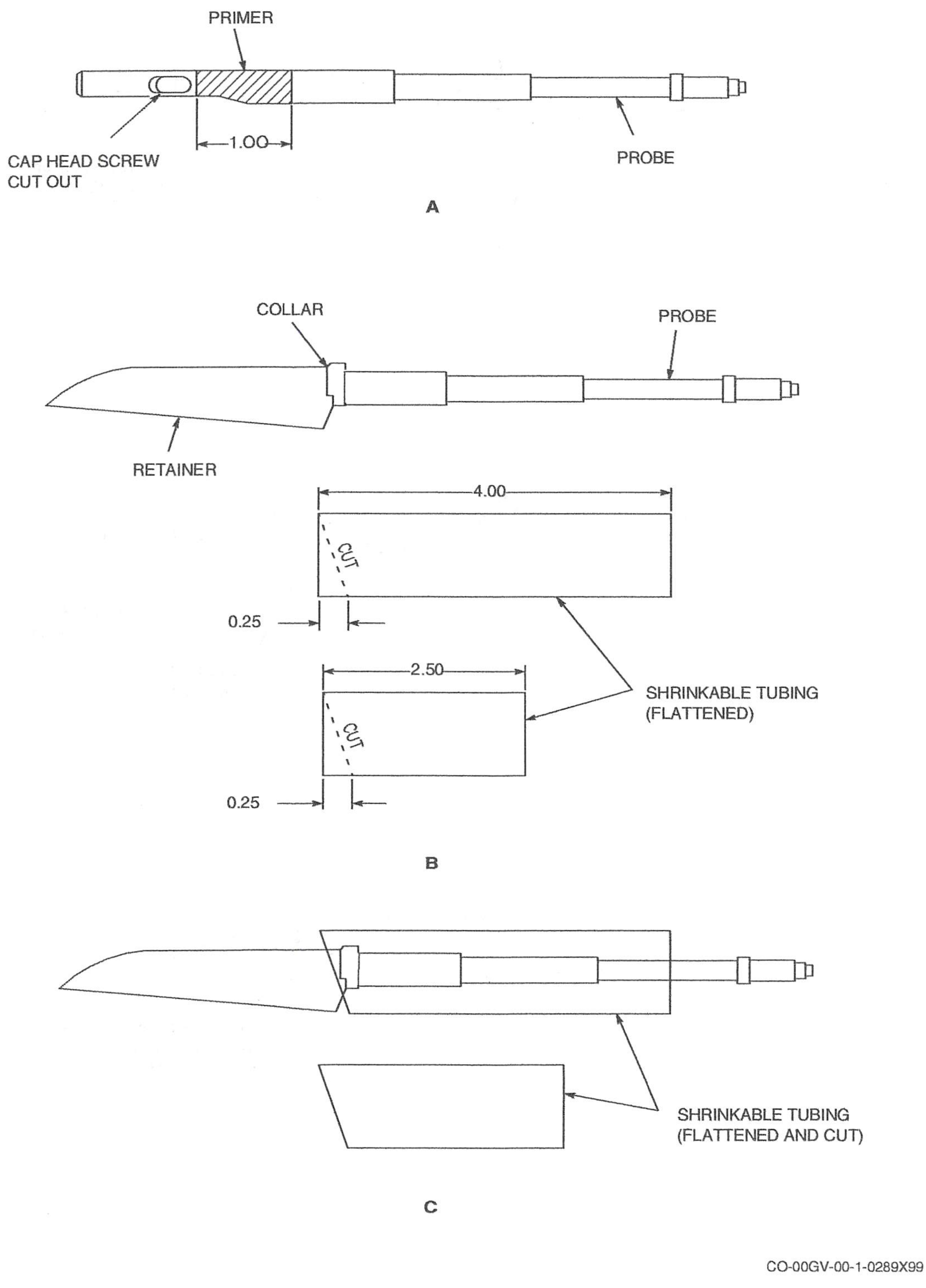


Figure 2-31. Static Discharger Probe Bonding and Shrink Tubing Installation.

2.23 TUBING REPAIR.

The F-16 hydraulic and pneumatic systems use 21-6-9 tubing per spec AMS 5561, 304 CRES tubing per spec AMS 5560, 321 tubing per spec AMS 5570, and 347 tubing per spec AMS 5571. 21-6-9, 321, and 347 tubing can be welded, but 304 CRES tubing cannot be welded. When field repair or replacement of any tubing in the hydraulic or pneumatic system is necessary, the following information will be used. See Table 2-14.

NOTE

Alternate tubing repair methods approved for used on F-16 aircraft may be found in TO 1-1A-8, Section XIII.

2.23.1 Lipseal Fitting Swaging. The lipseal fitting swaging is a process whereby the tubing is swaged to the fitting by mechanical expansion of the tube into the grooved receptacle of the fitting.

2.23.2 Swaging Tools. All the tools required for mechanical attachment of lipseal fittings are provided in set number R27500GD. The set is comprised of tube expanders, holding fixture dies, and gages for measurement of expander settings and finished swage diameters. Expanders are provided for each tube diameter and wall thickness specified. Male and female die sets are provided for each size of Dynatube fitting used. Lipseal installation tools are designed for use with type 304 1/8 hard stainless steel and 6061-T6 aluminum alloy. All tube expanders are furnished with an identification band which states the tool part number, the tube OD, wall thickness and material for which the tool is designed, and the final expansion value which the tool is set to produce. The design of the tool is such that the permitted specification tolerances of tube OD and wall thickness (approximately +0.005, -0.000-inch on OD and plus or minus 10 percent on the wall) are accommodated at the standard setting. The tools are preset at the factory, and no adjustment is required.

Table 2-14. Replacement Tubing.

F-16 TUBING 21-6-9 per AMS 5561	REPLACEMENT TUBING 304 1/8 H per MIL-T-6845 SMLS
1/4-inch OD x 0.020-inch wall	1/4-inch OD x 0.028-inch wall
3/8-inch OD x 0.020-inch wall	3/8-inch OD x 0.028-inch wall
1/2-inch OD x 0.026-inch wall	1/2-inch OD x 0.035-inch wall
5/8-inch OD x 0.033-inch wall	5/8-inch OD x 0.042-inch wall
3/4-inch OD x 0.039-inch wall	3/4-inch OD x 0.049-inch wall
1-inch OD x 0.052-inch wall	1-inch OD x 0.065-inch wall

2.23.3 Tool Cleaning, Lubrication, and Inspection.

WARNING

Grease is toxic. Avoid eye and skin contact. Goggles and gloves are required to prevent injury to personnel.

For optimum service life, the expanders shall be cleaned and lubricated on a regular basis. A high quality, extreme pressure grease is recommended for this purpose. Lube should be applied to the expander rollers prior to each swage. It is recommended the tools be cleaned and inspected prior to each day's use and after each series of 10 swages.

2.23.3.1 Tool Cleaning.

WARNING

- Mineral oil solvent is flammable and toxic. Avoid eye and skin contact. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.
- Use of compressed air for cleaning may create an environment of propelled foreign particles. Pressure used for cleaning shall not exceed 30 psi. Goggles are required or serious injury to eyes may result if personnel fail to observe this warning.

Tool cleaning is best accomplished by immersing the roller area of the expander in a mineral oil solvent followed by drying with a jet of compressed air.

2.23.3.2 Tool Inspection. Inspecting the rollers and mandrel for signs of pitting or spalling (chipping) is best accomplished by the use of a hand held magnifier. If pitting or spalling is observed, the tool should be set aside for repair.

2.23.4 Preparation of Tube Ends. Tube ends shall be clean and free of oils prior to assembly. The ends shall be cut square, and any end distortion, such as produced by a rolling-type tube cutter, shall be removed. The OD should have a square edge, but a 60-degree chamfer is recommended on the ID. (See Figure 2-33.)

2.23.5 Longitudinal Growth in Tubing Due to Swaging. The action of the lipseal expanding tools during the mechanical attaching process is to expand the tubing into the grooves of the fitting receptacle. At the same time, the tube is rolled to a slightly thinner cross section and material is thus displaced outward from the fitting, with the net result being a small increase in the effective length of tubing. The amount of longitudinal growth is a function of the tube and fitting size and the swage parameters. Table 2-15 lists the growth per fitting end. The numbers shown are for nominal dimension tubing; wall thickness greater than nominal will result in more growth.

2.23.6 Location of Bends. The physical dimensions of the lipseal tooling require a minimum straight length be maintained between the cut tube end and the nearest bend tangent point to provide for mandrel clearance. A minimum straight length of tube is also required to assure the presence of undisturbed cylindrical tubing at the fitting. The absolute minimum bend tangent distance shall reflect the greater of these two criteria. (See Figure 2-33 and Table 2-16.)

Table 2-15. Nominal Tubing Growth.

SIZE	MATERIAL	LONGITUDINAL GROWTH PER FITTING ATTACHMENT END
	(Replacement Tubing)	
1/4 x 0.028	304 1/8 H SS	0.016
3/8 x 0.028	304 1/8 H SS	0.013
1/2 x 0.035	304 1/8 H SS	0.025
5/8 x 0.035	6061-T6 AL	0.035
5/8 x 0.042	304 1/8 H SS	0.037
3/4 x 0.049	304 1/8 H SS	0.039
3/4 x 0.049	6061-T6 AL	0.044
1 x 0.065	304 1/8 H SS	0.05
1 x 0.058	6061-T6 AL	0.059
	(F-16 Tubing)	
1/4 x 0.020	21-6-9 SS	0.018
3/8 x 0.020	21-6-9 SS	0.024
1/2 x 0.026	21-6-9 SS	0.044
5/8 x 0.033	21-6-9 SS	0.051
5/8 x 0.035	6061-T6 AL	0.034
3/4 x 0.039	21-6-9 SS	0.039
3/4 x 0.049	6061-T6 AL	0.044
1 x 0.052	21-6-9 SS	0.06
1 x 0.058	6061-T6 AL	0.053
11/4 x 0.032	21-6-9 SS	0.087
11/4 x 0.072	6061-T6 AL	0.052

Table 2-15. Nominal Tubing Growth - Continued.

SIZE	MATERIAL	LONGITUDINAL GROWTH PER FITTING ATTACHMENT END

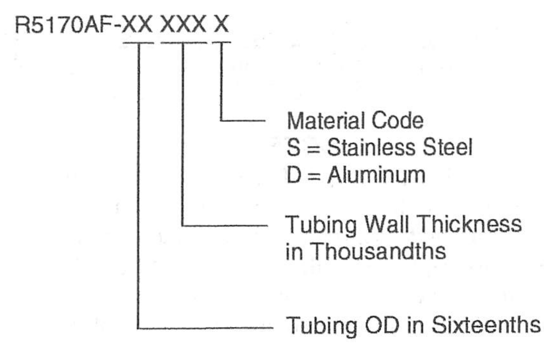
EXAMPLE: Assume a straight length of 1/2 x 0.035 size 304 1/8 hard stainless steel tubing is to have Dynatube fittings swaged to each end. Cut tube length is determined to be 4.625 inches. Based on the table above, nominal growth at each end is 0.025; therefore, correct cut tube length would be:

Cut tube length = 4.625 - 2 (0.025) = 4.575 inches

Table 2-16. Minimum Length of Straight Tubing to a 25-Degree or Greater Bend Tangent.

SIZE	MATERIAL	MINIMUM ALLOWABLE LENGTH (INCHES)
	(Replacement Tubing)	
1/4 x 0.028	304 1/8 H SS	1.095
3/8 x 0.028	304 1/8 H SS	0.800
1/2 x 0.035	304 1/8 H SS	0.987
5/8 x 0.035	6061-T6 AL	1.000
5/8 x 0.042	304 1/8 H SS	1.170
3/4 x 0.049	6061-T6 AL	1.000
3/4 x 0.049	304 1/8 H SS	1.000
1 x 0.058	6061-T6 AL	1.093
1 x 0.065	304 1/8 H SS	1.093
	(F-16 Tubing)	
1/4 x 0.020	21-6-9 SS	1.050
3/8 x 0.020	21-6-9 SS	0.850
1/2 x 0.026	21-6-9 SS	1.000
5/8 x 0.033	21-6-9 SS	1.000
5/8 x 0.035	6061-T6 AL	1.000
3/4 x 0.039	21-6-9 SS	1.000
3/4 x 0.049	6061-T6 AL	1.000
1 x 0.052	21-6-9 SS	1.093
1 x 0.058	6061-T6 AL	1.093
1-1/4 x 0.032	21-6-9 SS	1.281
1-1/4 x 0.072	6061-T6 AL	1.281

2.23.7 Tool Selection. Each expander is preset for a specific tube material and size. To identify the expander to be used, note the following example:



EXAMPLE

R5107AF-08035S designates an expander designed for 1/2-inch 8/16) OD tubing with a 0.035-inch wall thickness. Tube material is stainless steel.

CO-00GV-00-1-7777X99

2.23.7.1 Based upon the fitting size and configuration, select correct die set and collar. Check part number marked on dies and collars. The collar has a tapered ID which engages the conical exterior of the die sets.

NOTE

Check that tubing cleanly inserts into fitting to proper depth. See Table 2-17.

Table 2-17. Tube Insertion Depths.

TUBE DIAMETER	TUBE INSERTION DEPTH FITTING OF MR54XXX SERIES
1/4-inch	0.355
3/8-inch	0.355

Table 2-17. Tube Insertion Depths - Continued.

TUBE DIAMETER	TUBE INSERTION DEPTH FITTING OF MR54XXX SERIES
1/2-inch	0.43
5/8-inch	0.505
3/4-inch	0.505
1-inch	0.585
1-1/4 inches	0.66

2.23.8 Assembly and Swaging Procedure. The following instructions are provided to assemble the swaging tool and to make the swage. (See Figure 2-34 and Figure 2-35.)

NOTE

Before using any expander, visually check the condition of the mandrel and rollers for signs of pitting and spalling. Female reducer fittings use a noncaptive nut; this nut will not fit within the die halves, so it should be slid some distance down the tube so as to be out of the tooling.

a. Slip the fitting onto the tube so the tube contacts the positive stop on the inside diameter of the fitting.

b. Lubricate the expander rollers and mandrel. The recommended lubricant, Titan-lube 1129, is provided in the carrying case.

c. Position the expander mandrel in the fully retracted position with the tip of the mandrel within the expander.

d. Insert the expander into the fitting.

e. Position expander tube fitting assembly in one die set by placing expander lip into groove of die and the fitting into the die set nest.

f. Rotate mandrel clockwise until fingertight; all components will now hold relative position.

g. Assemble second half of die set over first half.

h. Holding assembled die halves together, slip holding collar over assembly from expanded end.

NOTE

Avoid positioning of thumbscrew over die parting line. It is recommended that the thumbscrew be positioned 15 to 90 degrees from the die parting line. (See Figure 2-35.)

i. Tighten thumbscrew fingertight into V-groove on die set, locking all components into place.

j. Secure assembly using the parallel flats of the collar as a gripping surface.

k. Using proper wrench, rotate the mandrel clockwise until the drive head contacts the stop collar and causes the stop collar to turn.

NOTE

The mandrel is self-feeding; therefore, no direct force is required nor should any be applied.

l. Rotate mandrel approximately 10 additional turns.

2.23.8.1 Disassembly Procedure. The following instructions are provided to disassemble the swaging tool and check the swaged fitting.

a. Rotate the mandrel counterclockwise until it backs out freely.

b. Loosen thumbscrew, remove collar, and disassemble the die halves.

c. Remove the expander and the tube fitting assembly.

d. Measure the inside diameter of the swaged tube for conformance to the dimensions shown on the tool identification band. (See Table 2-18.)

NOTE

Lipseal fittings are packaged in a clear, shrink-fit plastic bubble or skin pack on a sheet of cardboard. The bubble encases each component individually on the sheet, prevents any accidental damage in transit or handling, and provides for ease of stocking. Each fitting package is identified by part number. When the fitting is removed from the package, insure no trace of the plastic material remains in or on the fitting.

Table 2-18. Inside Diameter Dimensions.

SIZE	MATERIAL	FINISHED SWAGE ID (INCHES ±0.002)
	(Replacement Tubing)	
1/4 x 0.028	304 1/8 H	0.212
3/8 x 0.028	304 1/8 H	0.335
1/2 x 0.035	304 1/8 H	0.450
5/8 x 0.035	6061-T6 AL	0.575
5/8 x 0.042	304 1/8 H	0.564
3/4 x 0.049	6061-T6 AL	0.680
3/4 x 0.049	304 1/8 H	0.678

Table 2-18. Inside Diameter Dimensions - Continued.

SIZE	MATERIAL	FINISHED SWAGE ID (INCHES ±0.002)
1 x 0.058	6061-T6 AL	0.915
1 x 0.065	304 1/8 H	0.900
	(F-16 Tubing)	
1/4 x 0.020	21-6-9 SS	0.226
3/8 x 0.020	21-6-9 SS	0.353
1/2 x 0.026	21-6-9 SS	0.471
5/8 x 0.035	21-6-9 SS	0.584
5/8 x 0.035	6061-T6 AL	0.575
3/4 x 0.039	21-6-9 SS	0.699
3/4 x 0.049	6061-T6 AL	0.680
1 x 0.052	21-6-9 SS	0.925
1 x 0.058	6061-T6 AL	0.915
1-1/4 x 0.032	21-6-9 SS	1.207
1-1/4 x 0.072	6061-T6 AL	1.133

2.23.9 Tube Assembly Alignment. When installing a lipseal tube assembly between two fixed points, the fit or alignment must permit connector nut engagement without damaging the threads or imparting excessive bending stress into the tube. The limits of acceptable misalignment depend upon the length and rigidity of the tube assembly. The misalignment should be limited as follows:

a. Angular Misalignment - 2 degrees

b. Lateral Misalignment - 0.062-inch

c. Longitudinal Gap - 0.062-inch.

2.23.10 Torque Values for Dynatube Coupling Nuts. Lipseal fittings are not torque sensitive. However, a torque range has been developed which will insure the structural reliability of the joint. It is recommended that torque wrenches be used and the torque values from Table 2-19 be used.

NOTE

When torquing the coupling to a connector fitting, restrain the connector, using the hex flats, from rotating or transmitting torque to the tube assembly.

2.23.11 Troubleshooting for Nonconformance of Swage ID. If the measured swage ID does not correspond to the plus or minus 0.002-inch tolerance of the value shown on the expander ID band or in Table 2-18, the following checks should be made:

2.23.11.1 The Measured Value is Larger Than Specified. Check the calibration of the inside diameter inspection gage. This instrument can be checked with a calibrated ring gage or a micrometer. It should be checked, however, at a diameter as close as practical to the swage in question. Verify, by measurement, that the tube wall thickness is within plus or minus 10 percent of the nominal value shown on the expander identification band.

Table 2-19. Torque Values.

DYNATUBE FITTING SIZE	TORQUE RANGE (INCH POUNDS)		
	MIN	NOM	MAX
1/4-inch	140	150	155
3/8-inch	240	250	260
1/2-inch	380	400	420
5/8-inch	570	600	630
3/4-inch	805	850	895
1-inch	950	1000	1050
1-1/4 inches	1425	1500	1575

2.23.11.2 The Measured Value is Smaller Than Specified. Check the inside diameter gage calibration and the tube wall thickness as in paragraph TROUBLESHOOTING FOR NONCONFORMANCE OF SWAGE ID (2.23.11). Clean and inspect the expander. An excessively spalled roller will in turn erode the mandrel, thereby producing an underswaged assembly. If, after performing these checks, the cause is not determined, the set dimension of the expander should be measured. For this purpose, the V-anvil micrometer, R24837-16-20, included in the kit, is required. See Table 2-20 for the specified set diameters (the diameter over the rollers with the mandrel held tightly against the stop collar).

Table 2-20. Specified Set Diameters.

EXPANDER	SET DIAMETER (ALLOWABLE TOLERANCE +0.001, -0.000)
(Replacement Tubing)	
R5170AF 04028S	0.216
R5170AF 06028S	0.339
R5170AF 08035S	0.455
R5170AF 10035D	0.58
R5170AF 10042S	0.569
R5170AF 12049D	0.685
R5170AF 12049S	0.688

Table 2-20. Specified Set Diameters - Continued.

EXPANDER		SET DIAMETER (ALLOWABLE TOLERANCE +0.001, -0.000)
R5170AF 16058D		0.921
R5170AF 16065S		0.907
SIZE	MATERIAL	SET DIAMETER (ALLOWABLE TOLER-ANCE+0.001, -0.000)
	(F-16 Tubing)	
1/4 x 0.020	21-6-9 SS	0.230
3/8 x 0.020	21-6-9 SS	0.357
1/2 x 0.026	21-6-9 SS	0.476
5/8 x 0.033	21-6-9 SS	0.589
5/8 x 0.035	6061-T6 AL	0.580
3/4 x 0.039	21-6-9 SS	0.706
3/4 x 0.049	6061-T6 AL	0.685
1 x 0.052	21-6-9 SS	0.934
1 x 0.058	6061-T6 AL	0.921
1-1/4 x 0.032	21-6-9 SS	1.216
1-1/4 x 0.072	6061-T6 AL	1.140

2.23.12 Lipseal Connector Fitting Resurfacing. The lipseal connector fitting employs an 8-1/2-degree conical surface to form a seal with the mating beam of the lipseal shoulder fitting. For leak-proof sealing, this surface is machined to a finish of 50 RHR (roughness height rating) and coated with a solid film lubricant. Should this connector fitting sealing surface become damaged, the sealing function may be impaired. If the damage is confined to slight scratches or other minor surface damage, the repair tooling in the R27500GD kit can be used to restore the fitting to full effectiveness. If the damage is excessive, fitting replacement is required. In order to assure maximum sealing efficiency, repair of the shoulder (dynamic seal) fitting is not recommended. If the shoulder fitting should become damaged, replacement is required.

2.23.13 Lipseal Connector Fitting Resurfacing Procedure. The resurfacing of a lipseal fitting is a critical operation which must be undertaken with care and diligence. The steps listed shall be adhered to if the lipseal fitting is to seal properly.

a. Determine the size of the lipseal fitting to be repaired. Select the corresponding resurfacing tool and emery disc kit.

b. Disassemble the resurfacing tool by withdrawing the capscrew. Without disturbing the arrangement of the Teflon cup and lock sleeve (Figure 2-36), place one of coarser emery discs against the convex surface of the tool body. The grit should face outward. Reassemble the tool and tighten the capscrew fingertight.

c. Insert tool into the lipseal fitting until the emery contacts the sealing surface. Some force may be required to push the Teflon cup into the fitting bore. The tightness of fit insures chip removal when the tool is withdrawn.

d. Using modest pressure, rotate the tool back and forth until a smooth surface is achieved. It is advisable to rotate the fitting occasionally to keep the abrasive action uniform.

e. Remove the tool and repeat with progressively finer emery discs.

f. When the surface is determined to be smooth and free of scratches, the fitting should be thoroughly cleaned in preparation for applying the dry lubricant.

NOTE

Toluene solvent is flammable and toxic. Avoid eye and skin contact and prolonged breathing of vapors. Use only in a well-ventilated area. Goggles and gloves are required to prevent injury to personnel.

g. Clean the sealing surface using toluene solvent and cotton swabs provided in the lube repair kit. Allow to dry for 5 minutes.

h. Apply the phosphoric acid etching agent with a clean cotton swab and allow to dry for 1 minute.

i. Rinse the sealing surface with deionized water using a clean cotton swab. Allow to dry for 2 minutes.

j. Reapply toluene solvent and allow to dry for 5 minutes.

k. Shake Perma Slik S, PN R24837-9 (50599), vial until contents reach a homogeneous liquid state. Apply to sealing surface with a clean cotton swab, using smooth strokes to provide a uniform thickness. Allow 30 minutes to air-dry or bake dry for 5 minutes at 200°F.

2.23.14 Hydraulic and Pneumatic Tube Chafe Limitations. Hydraulic or pneumatic tubing may chafe under any clamping device (loop or block clamps, bulkhead seals, or grommets). Chafing may also occur between adjacent tubing and/or ducting, aircraft structure, or equipment. Chafing conditions shall be corrected. In some cases this may be accomplished by repositioning and/or reclamping. If the criteria for chafing limitations below are exceeded, repair or replace

the damaged tube. The following chafe limitations pertain to hydraulic and pneumatic metal tubing only:

a. Allowable chafing criteria consider only those conditions found in straight tubing sections. No chafing conditions are allowed in bent tubing sections due to reduced wall thicknesses induced during forming operations.

b. Inspection of chafed areas or suspected chafed areas will require the removal of clamps, blocks, or bulkhead seals and may also require the removal of the suspect tube assembly from the aircraft. This is required to properly measure the amount of wear in the chafed or suspected chafed area.

c. Reduction in tube wall thickness due to chafing shall not exceed 10 percent for stainless steel (high pressure) tubing or 15 percent for aluminum (low pressure) tubing. Chafing damage which exceeds these limitations may be repaired by splicing in a new tube section or by replacement of the entire tube assembly.

d. Minor chafing or fretted conditions may be reworked using standard shop practices if, during the process, the tube wall thickness wear limitations are not exceeded (TO 1-1-691). If limitations are exceeded during rework, the tube shall be repaired or replaced.

e. Tubing which shows any visual signs of kinking, roughness, scoring, or gouging or is not smooth to the touch shall be repaired or replaced. Other general tubing damage limitations (denting, etc.) may be found in TO 1-1A-8.

CAUTION

A loop/block clamp shall not be placed on a tube repair union. Failure to comply may result in possible damage to equipment.

f. Clamps and Seals.

NOTE

To prevent further abrasive contaminants from becoming imbedded in new bulkhead seals or grommets after installation, a small fillet of PR1750B1/2 sealant (or equivalent) shall be added around circumference of tube/grommet/seal interface. Sealant shall be applied to the interface on both sides of bulkhead and shall be allowed to dry per sealant application instructions.

(1) Loop and/or block clamps, bulkhead seals, or grommets shall be replaced where chafing is evident since the cushion material on used clamps, seals or grommets, and thermoplastic blocks probably contain imbedded abrasive materials.

(2) C3175-84F (MM3175-84F) clamp may be replaced by C20540-1 (S677) Buna-N block clamps to design environment. It should be noted that C20540-1 block clamps are slightly wider in dimension.

(3) MS21122C clamps may be replaced by M85052/1 clamps. It should be noted that M85052/1 clamps have Buna-N cushion material.

(4) MM2765 clamps may be replaced by C11730 clamps. It should be noted that C11730 clamps have Buna-N cushion material.

2.23.15 Hydraulic Hose Assembly Chafe Limitations. Hose assembly damage shall not exceed the limitations as outlined in TO 42E1-1-1, Section 4-4.

2.23.16 Hydraulic and Pneumatic Tube Replacement During 6 Recurring Inspections. Review HYDRAULIC AND PNEUMATIC TUBE CHAFE LIMITATIONS (2.23.14) in its entirety before proceeding. Due to the intensive maintenance requirements sometimes needed to gain access to inspection areas, the following general guidelines are recommended:

NOTE

The following task will benefit from the use of B-nut crowsfeet as recommended.

a. Inspection access to those areas where lines pass through bulkhead holes will require B-nut disconnection (where applicable) and repositioning of the line assembly forward and aft as required.

b. Swaged lines may require sectioning to properly inspect the areas that pass through bulkhead holes.

c. If line replacement is needed, low profile or "reversed tools" may be required to accomplish repairs and reinstallation of lines. (REF TO 1-1A-8, Section 13). Each tool manufacturer has low profile or "reversed" tooling which is compatible with the standard tool sets already in field use.

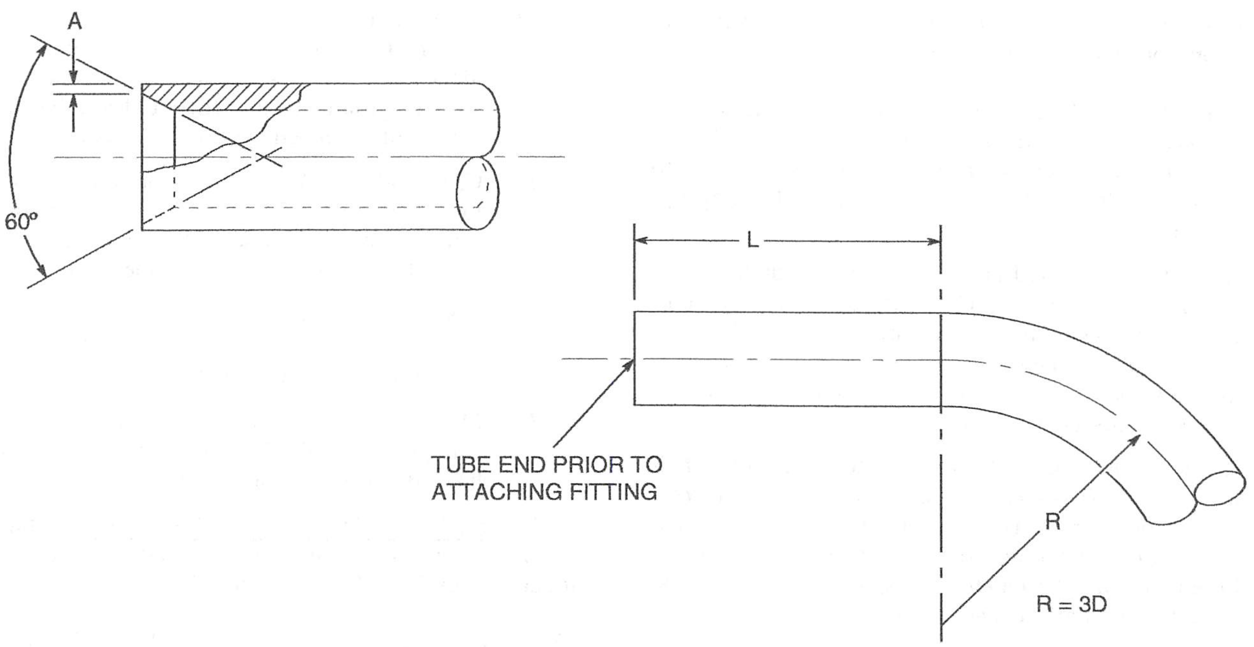
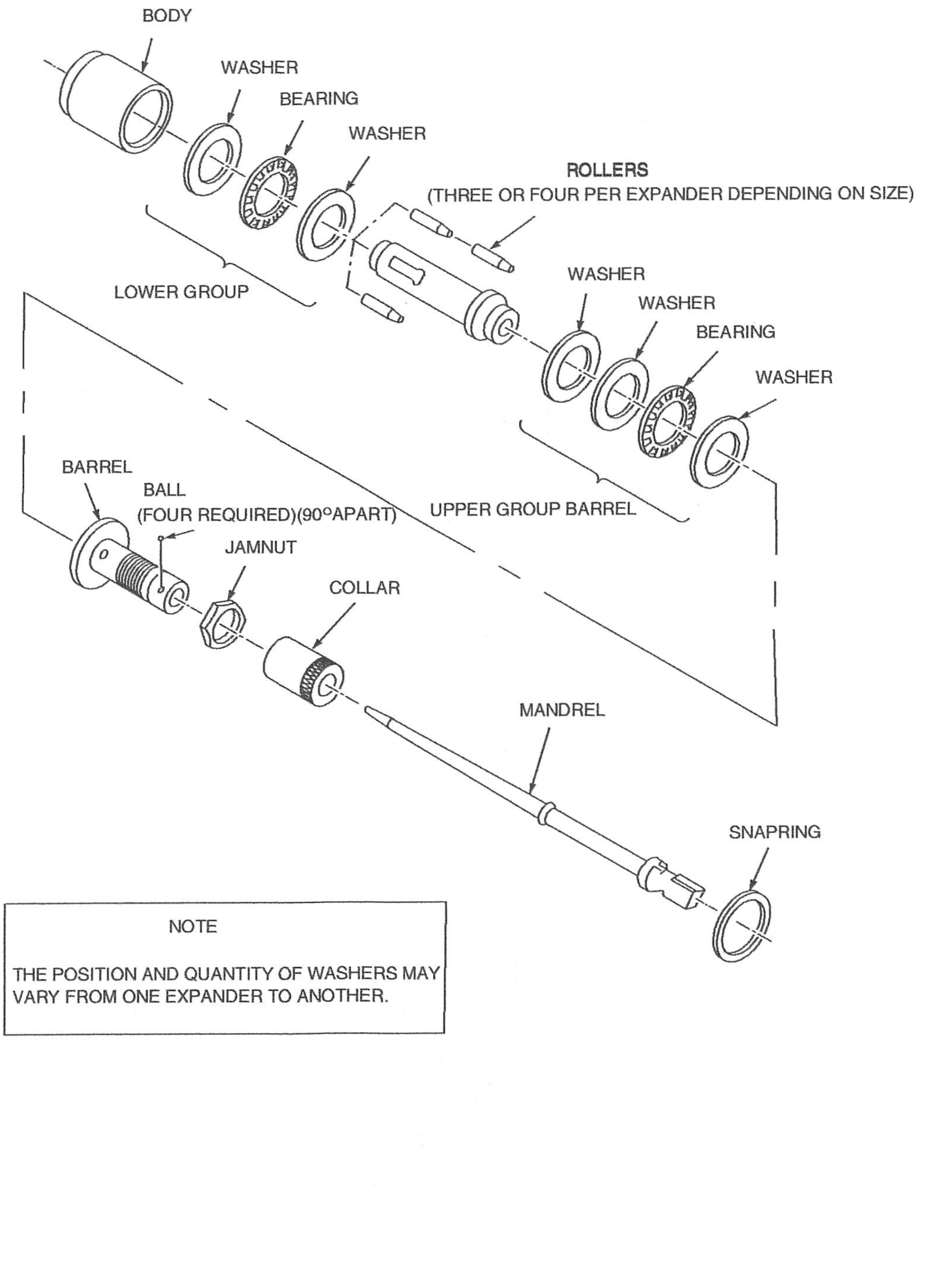


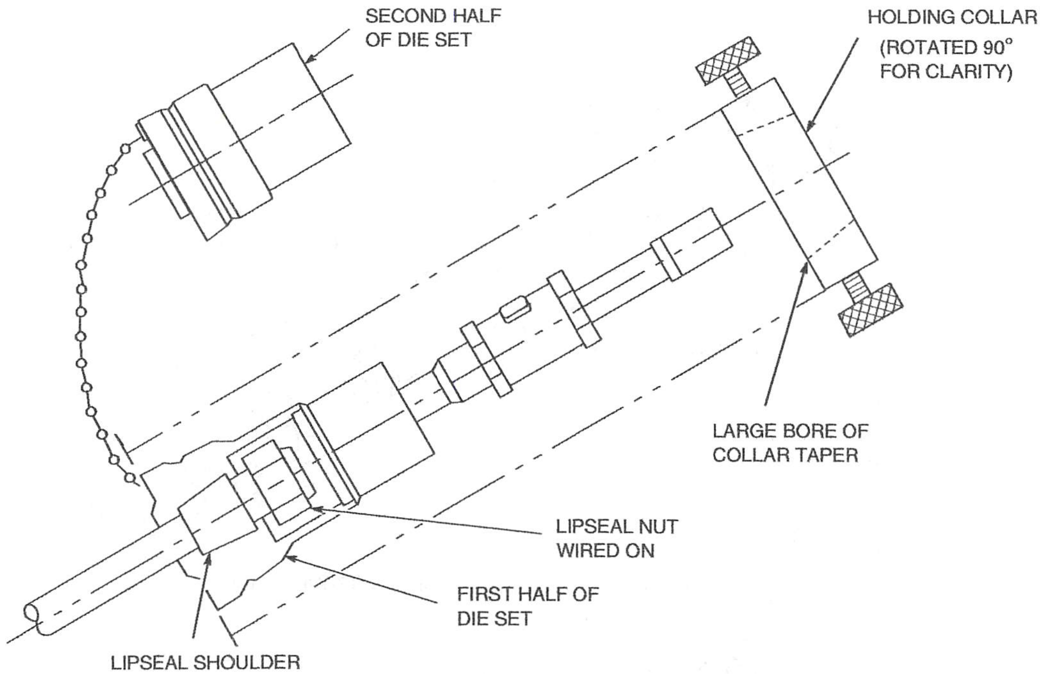
Figure 2-33. Tubing Measurements.



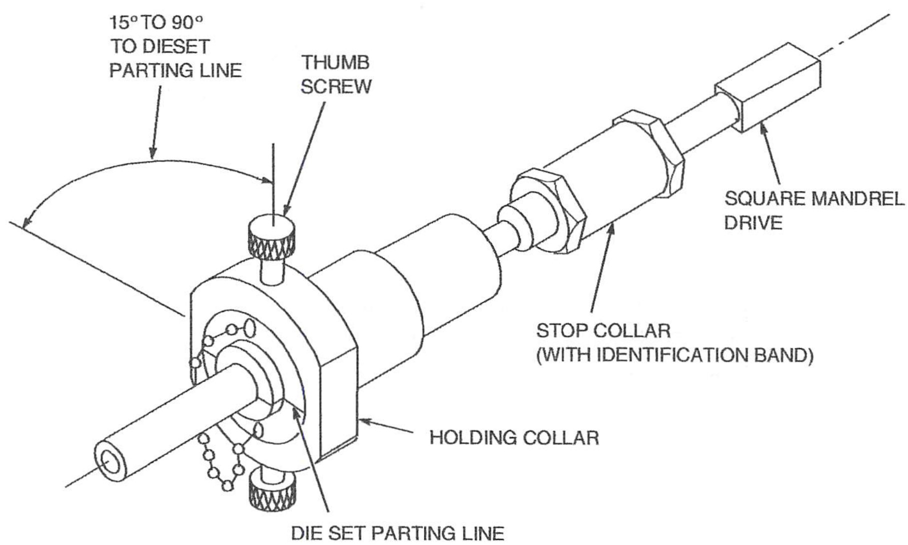
NOTE

THE POSITION AND QUANTITY OF WASHERS MAY VARY FROM ONE EXPANDER TO ANOTHER.

Figure 2-34. Expander Disassembled.



TUBING AND FITTING POSITIONED IN DIE SET



TUBING AND FITTING READY FOR SWAGING

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Figure 2-35. Tubing and Fitting Ready for Swaging.

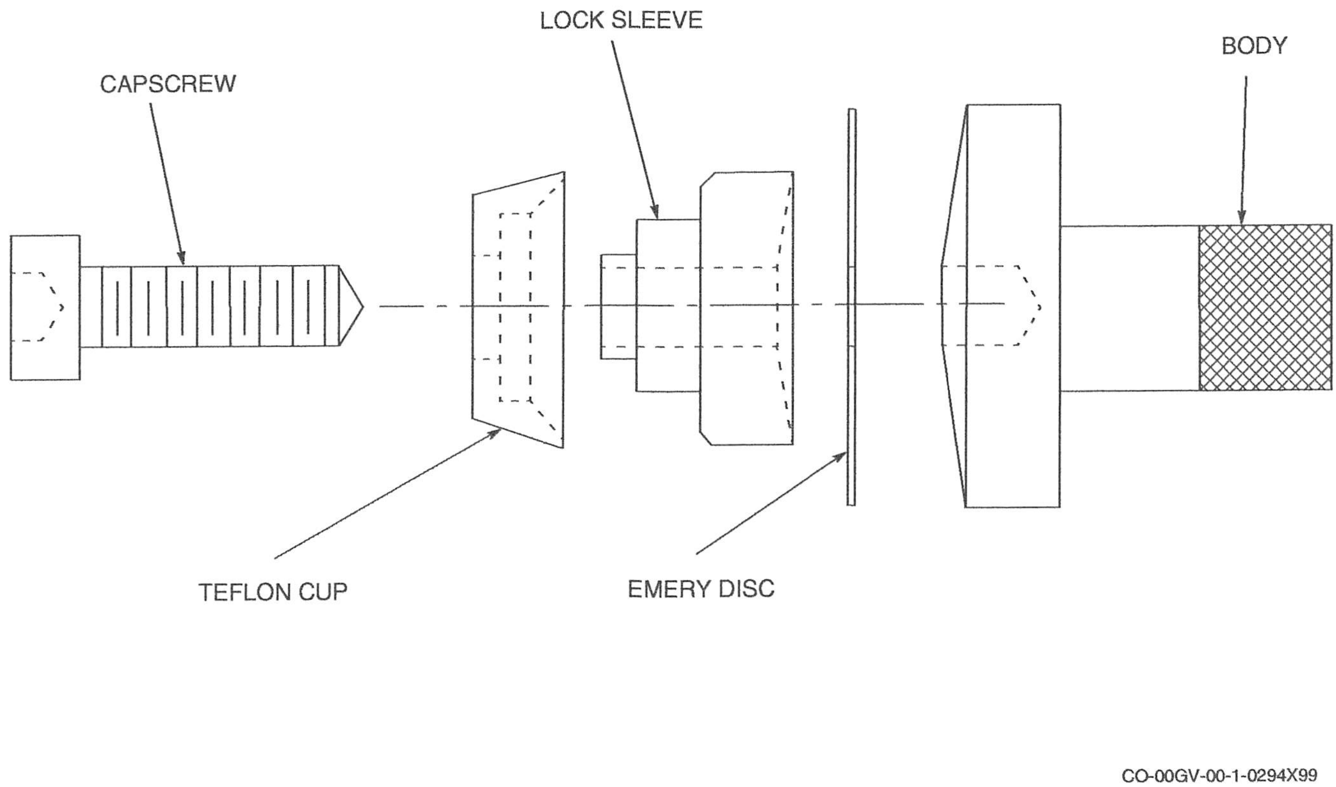


Figure 2-36. Resurfacing Tool.

CHAPTER 3

AIRCRAFT SAFETY

3.1 AIRCRAFT SAFETY PRECAUTIONS.

WARNING

- When performing ground handling operations, personnel shall follow applicable safety instructions and must thoroughly understand the reasons for the safety precautions. Accidental actuation of a system during ground handling operations could result in serious injury to personnel or damage to the aircraft and equipment.
- The nose radome shall not be opened by one person when exposed to winds in excess of 40 knots. Opening the radome in higher winds could result in serious injury to personnel or damage to the aircraft or equipment.
- The radome may be opened and closed with a two-person team using extreme care with winds up to 57 knots. Opening the radome in winds in excess of 57 knots under any condition will result in serious injury to personnel or damage to aircraft or equipment.
- Do not enter areas under arresting hook, external stores pylons, external fuel tanks, and chaff/flare dispenser until all applicable safety pins have been installed. Failure to comply may result in serious injury or death to personnel.

CAUTION

- Personnel working on aircraft shall use special care to protect aircraft surfaces from dents, scratches, or abrasions that may affect the performance of the aircraft. Protective covers shall be used on walk areas during high-volume traffic. Protective shoe coverings or soft-soled, non-scuff shoes without nails shall be used at all other times. Sharp-edged tools shall not be placed on exterior surfaces. Failure to observe this caution may result in damage to aircraft.
- Ground safety locks and pins are provided for use during ground operations or when the aircraft is parked or in storage. Before performing ground handling operations, personnel shall insure all applicable ground safety locks and pins are installed. Additional safety locks may be used during maintenance on a specific system or component. Failure to observe this caution may result in damage to aircraft.
- To prevent damage to the console, the safety pin in the ejection control safety handle shall be removed before lowering the seat. Failure to comply may result in damage to equipment.

Proper precautions shall be taken to protect the safety of the aircraft, accessories, equipment, and the maintenance personnel working on the aircraft as above.

3.2 PERSONNEL/AIRCRAFT SAFETY DURING REMOVAL OF MAJOR COMPONENTS WITH ENGINE INSTALLED.

When major components are removed from an aircraft that has an engine installed, the Center of Gravity (CG) will move aft and closer to the pivot point (main gear centerline, FS 343.12) of the aircraft.

3.2.1 Center of Gravity Location. The CG of the basic aircraft is located at approximately A FS 324.1, B FS 320.0. The location of the CG will vary with the fuel load and equipment configuration of the aircraft. Therefore, when a major component forward of the aircraft pivot point is removed, the aircraft CG will move aft toward the pivot point, reducing the load (weight) on the nose gear. Thus, anytime the weight on the nose gear is calculated to be less than 1600 pounds, a critical aft CG condition (marginal CG) has been created and precautionary measures shall be taken.

3.2.2 Engine and Major Component Removal.

WARNING

- Before removing more than one major component with the engine installed in the aircraft, the aircraft condition, including fuel load and equipment status, shall be evaluated. If the weight on the nose gear with the components removed is calculated to be 1600 pounds or less, a safety cable through the nose gear tiedown fitting at FS 88.0 (nose jack pad) or placement of a jack or jacks at FS 374.3 (aft jack pad(s)) is required. Failure to observe this warning may cause the aircraft to rotate aft and fall on the aft section, resulting in injury or death to personnel and/or damage to the aircraft.
- Do not stand or walk on the walkway of the aft fuselage section of the aircraft with the engine installed when one or more major components are removed. Failure to observe this warning may cause the aircraft to rotate aft and fall on the aft section, resulting in injury or death to personnel and/or damage to the aircraft.

When the engine and additional major components are to be removed, the engine shall be removed first and/or the above warnings shall be observed.

3.2.3 Component Removal Safety Precautions. When components are removed from the aircraft, proper safety precautions shall be taken to protect personnel from injury and possible death and to prevent damage to the aircraft.

3.2.3.1 Table 3-1 and Table 3-2 list the approximate weight remaining on the nose gear (nose gear loading) after major components are removed and if a safe, marginal, or unsafe condition exists. Table 3-1 lists the nose gear loading with a zero usable fuel load onboard the aircraft and no external stores installed. Table 3-2 lists the nose gear loading with a full internal fuel load onboard the aircraft and no external stores installed.

3.2.3.2 Table 3-1 and Table 3-2 also list the recommended removal sequence of the major components, if engine removal is required prior to component removals, and whether the aircraft is to be tied down or have jack(s) installed. If a marginal or unsafe condition exists during component removal as listed in Table 3-1 or Table 3-2, observe the above.

Table 3-1. Nose Gear Loading (NGL) Condition with Zero Usable Fuel Load.

ENGINE INSTL	RADAR INSTL	GUN INSTL	SEAT(S) AND CANOPY	APPROX NGL		LOADING CONDITION		
				F-16A	F-16B	SAFE	MARGINAL	UNSAFE
F100-PW-200								
(1)				3540	4140	•		
(1)	(2)			2640	3230	•		
(1)	(3)	(2)		2280	2880	•		
(1)	(4)	(3)	(2)	1660	1970	• B	• A	
	(3)	(2)	(1)	-40	270			•
		(2)	(1)	860	1170			•
(1)			(2)	2920	3220	•		
	(2)		(1)	320	620			•
	(1)			940	1530			•
		(1)		1480	2080	• B		• A
			(1)	1220	1520			•
	(2)	(1)		580	1180			•
F100-PW-220								
(1)				3630	4160	•		
(1)	(2)			2730	2360	•		

Table 3-1. Nose Gear Loading (NGL) Condition with Zero Usable Fuel Load - Continued.

ENGINE INSTL	RADAR INSTL	GUN INSTL	SEAT(S) AND CANOPY	APPROX NGL		LOADING CONDITION		
				F-16A	F-16B	SAFE	MARGINAL	UNSAFE
(1)	(3)	(2)		2370	2910	•		
(1)	(4)	(3)	(2)	1750	2000	•B	•A	
	(3)	(2)	(1)	10	250			•
		(2)	(1)	910	1160			•
(1)			(2)	3010	3250	•		
	(2)		(1)	370	610			•
	(1)			990	1520			•
		(1)		1530	2070	•B		•A
			(1)	1270	1510			•
	(2)	(1)		630	1170			•

NOTE: ( ) indicates recommended removal sequence as applicable.

Table 3-2. Nose Gear Loading (NGL) Condition with Full Internal Fuel Load.

ENGINE INSTL	RADAR INSTL	GUN INSTL	SEAT(S) AND CANOPY	APPROX NGL		LOADING CONDITION		
				F-16A	F-16B	SAFE	MARGINAL	UNSAFE
F100-PW-200								
(1)				4720	4230	•		
(1)	(2)			3820	3330	•		
(1)	(3)	(2)		3460	2970	•		
(1)	(4)	(3)	(2)	2850	2060	•		
	(3)	(2)	(1)	1150	360			•
		(2)	(1)	2050	1260	•A		•B
(1)			(2)	4100	3320	•		
	(2)		(1)	1500	720			•
	(1)			2120	1630	•A	•B	
		(1)		2670	2170	•		
			(1)	2400	1620	•A	•B	
	(2)	(1)		1760	1270		•A	•B
F100-PW-220								
(1)				4810	4260	•		
(1)	(2)			3910	3360	•		
(1)	(3)	(2)		3550	3000	•		
(1)	(4)	(3)	(2)	2940	2090	•		
	(3)	(2)	(1)	1190	350			•

Table 3-2. Nose Gear Loading (NGL) Condition with Full Internal Fuel Load - Continued.

ENGINE INSTL	RADAR INSTL	GUN INSTL	SEAT(S) AND CANOPY	APPROX NGL		LOADING CONDITION		
				F-16A	F-16B	SAFE	MARGINAL	UNSAFE
		(2)	(1)	2090	1250	•Ⓐ		•Ⓑ
(1)			(2)	4190	3350	•		
	(2)		(1)	1550	700			•
	(1)			2170	1610	•Ⓐ	•Ⓑ	
		(1)		2710	2160	•		
			(1)	2450	1600	•Ⓐ	•Ⓑ	•
	(2)	(1)		1810	1260	•Ⓐ		•Ⓑ

NOTE: ( ) indicates recommended removal sequence as applicable.

3.3 H-70 (HYDRAZINE) FUEL SPILL MANAGEMENT AND NEUTRALIZATION.

WARNING

Hydrazine is colorless with an ammonia-like odor and is a highly toxic substance. Personnel shall be familiar with and follow the WARNINGS, CAUTIONS, and procedures set forth in TO 1F-16( )-2-49GS-00-1 (H-70 FUEL SPILL MANAGEMENT AND NEUTRALIZATION) before handling hydrazine. Failure to comply may result in injury or death to personnel.

It is important that personnel be familiar with appropriate procedures for handling of hydrazine spills. Maintenance personnel shall be knowledgeable of the content of TO 1F-16( )-2-49GS-00-1 (H-70 FUEL SPILL MANAGEMENT AND NEUTRALIZATION).

3.4 EXPLOSIVES-LOADED AIRCRAFT.

It is desirable to remove all explosives from aircraft undergoing maintenance. This is often time consuming and increases the exposure to explosive hazards. Certain types of maintenance that do not subject the explosives load to hazardous conditions may be performed, provided the following warning and safety precautions, where applicable, are observed.

3.4.1 Applicable Directives.

WARNING

Prior to performing maintenance on an aircraft with explosives aboard, observe all safety precautions. Failure to observe precautions may result in injury to personnel and/or damage to aircraft.

Directions and requirements contained in regulations/directives and the following related documents are also applicable when performing maintenance on explosives-loaded aircraft: AFI 21-101 and AFI 21-114, AFM 127-1, AFMAN 91-201, TO 1F-16( )-33-1-2, and TO 11A-1-33.

3.4.2 Explosives-Loaded Aircraft Safety Precautions.

In addition to the requirements of TO 11A-1-33, the following precautions shall be observed:

a. Maintenance on the SMS includes removal/checkout or troubleshooting of MMC, RIU, MFD, master arm switch, release enable switch, jettison switch, alternate release switch, selective jettison switch, associated MLG weight-on-wheels switch, trigger, bomb button, armament system circuit breakers, relay matrices, and associated wiring. SMS maintenance also includes activation of the fire control system if generation of release pulses through the SMS is to be accomplished. When maintenance is to be accomplished to the stores management system, the following shall be accomplished:

NOTE

- An operational AIM-9 missile equipped with an SAFE/ARM key/handle in the safe position, or on a launcher that precludes jettison power from reaching the missile and CATM/training AIM-9 missile with inert motor and warhead need not be downloaded when performing functional checks or maintenance. The umbilical cable need not be disconnected provided the SMS switch is maintained in the OFF position at all times other than when inventorying memory or loading stores memory to match mission requirement. If missile umbilical is disconnected, missile shorting cap/dust cover and missile dome cover will be installed.
- An operational or captive AIM-120 need not be downloaded when performing functional checks or maintenance provided the missile umbilical is retracted. The umbilical need not be retracted provided the SMS switch is maintained in the OFF position a all times other than when inventorying memory or loading stores memory to match mission requirement.

(1) If the above criteria cannot be met, download all live missiles.

(2) Remove all rockets.

(3) Mechanically and electrically safe external stores by installing proper safety pins.

(a) Electrical safing requires a device which will prohibit the transfer of electrical power to electrically released or initiated munition items.

(b) Mechanical safing requires a device which will mechanically lock and prevent the release or functioning of a system or component.

(4) Remove impulse cartridges from fuel tank pylons. Cartridge removal procedures are contained in TO 1F-16( )-33-1-2.

b. When maintenance is to be accomplished on aircraft, make flares safe by installing a safety pin with red streamers into the EMI filter located just forward of the right chaff/flare dispenser.

3.4.3 Aircraft Safe for Maintenance. Prior to all maintenance, the aircraft is parked in the general maintenance area with chocks and landing gear safety pins installed and the cockpit canopy open. To make the aircraft safe for maintenance, the following tasks shall be accomplished. When cockpit entry is not required, the aircraft is safe if all external locking devices are installed. When cockpit entry is required, it is necessary to insure the cockpit is safe for entry as well as installing all external locking devices. When power is to be applied, it is necessary to insure the aircraft is safe for power application as well as the cockpit being safe for entry and the external locking devices installed. All procedures to establish the aircraft safe for maintenance are contained in Remove impulse cartridges from fuel tank pylons. Cartridge removal procedures are contained in TO 1F-16( )-33-1-2.

3.4.4 Hazardous Areas.

WARNING

Stay clear of JFS and engine turbine wheel planes of rotation during engine start to prevent possible injury to personnel.

Hazardous areas due to engine blast, tire explosion, noise levels, radiation, and temperature levels are shown in Figure 3-1 through Figure 3-3.

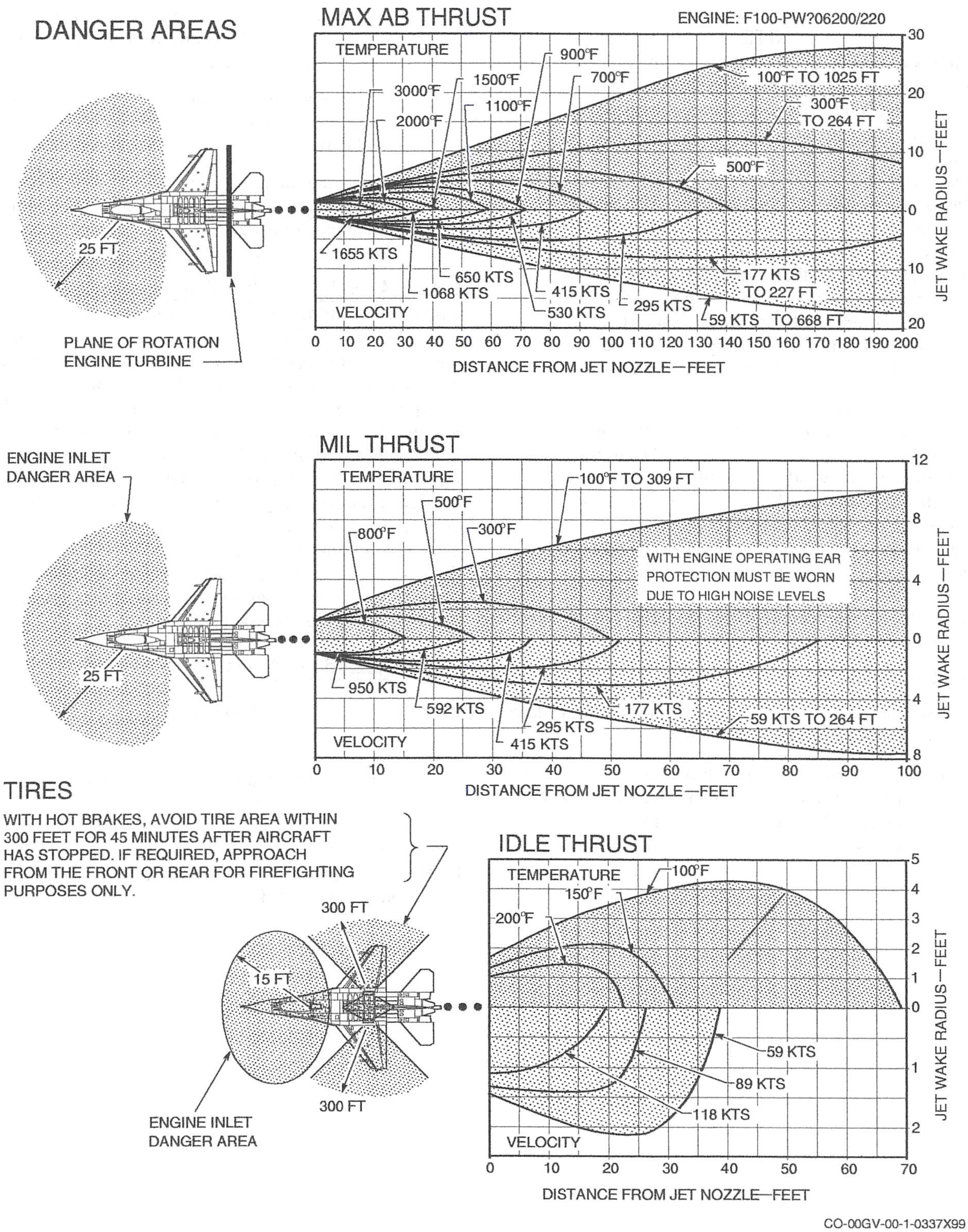


Figure 3-1. Hazardous Engine Blast and Tire Explosion.

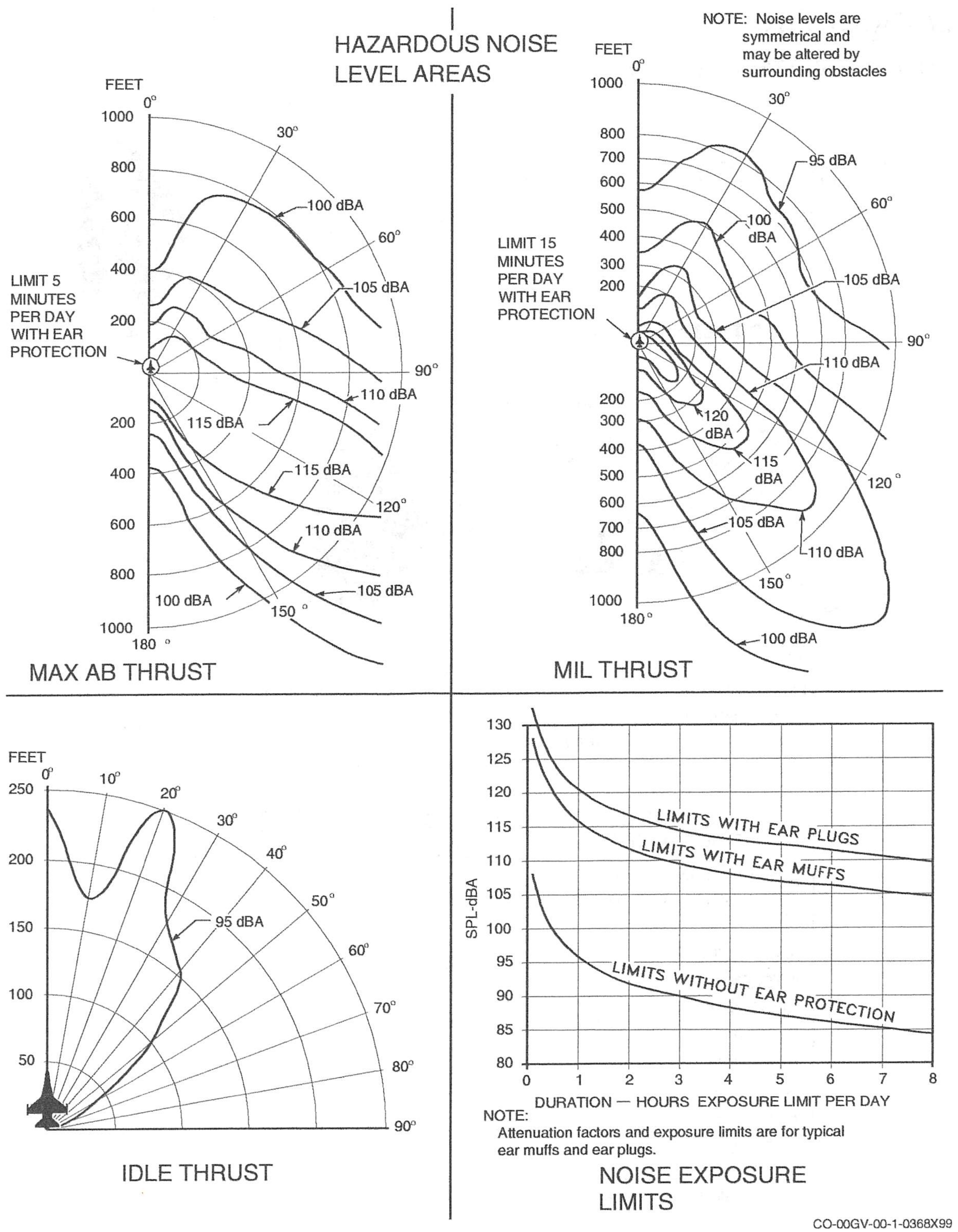


Figure 3-2. Hazardous Noise Level Areas.

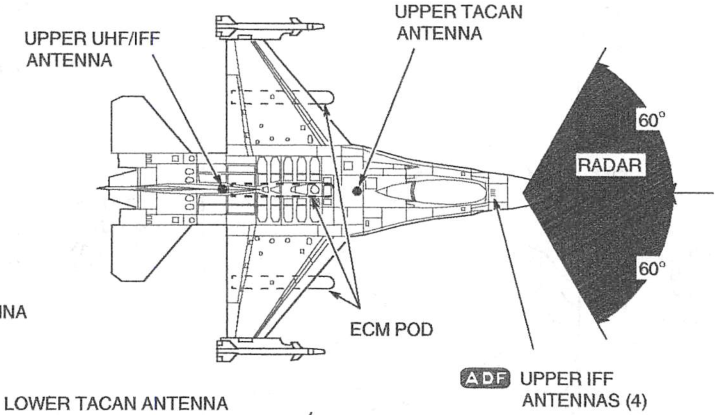
Danger Areas

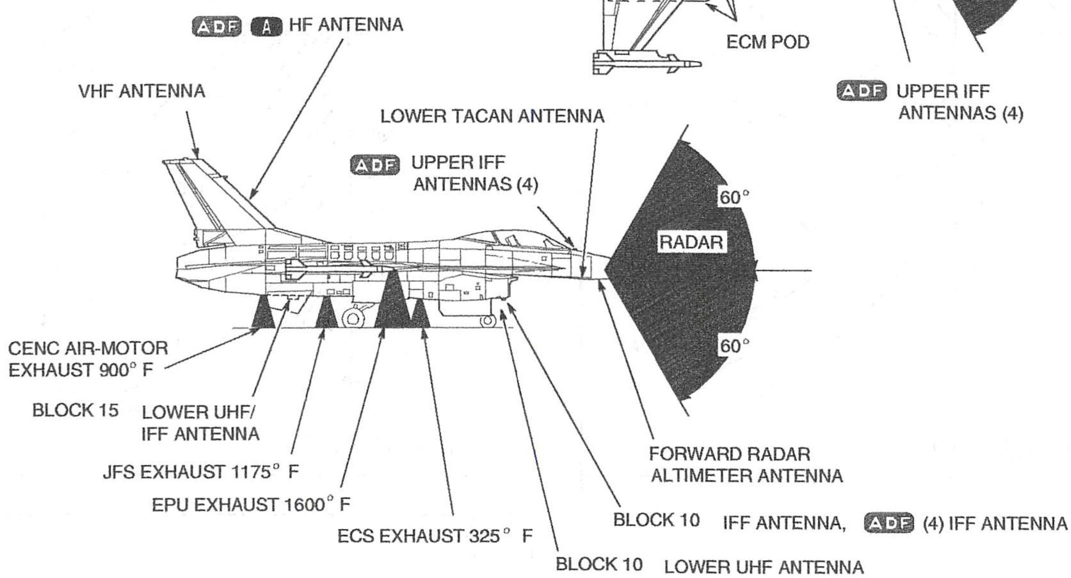
ENGINE F100-PW-200/220

RADIATION AND TEMPERATURE

NOTES:

- Distance from radar disc to forward tip of radome = 5 feet.
- ECM pods radiate in a fan pattern fore and aft.





OPERATING TRANSMITTERS	MINIMUM SAFE DISTANCE FROM ANTENNAS IN FEET		
	VOLATILE FLUIDS	PERSONNEL	EED
UPPER AND LOWER UHF/IFF	—	1	—
UPPER AND LOWER TACAN	—	1	—
VHF	—	1	—
RADAR ALTIMETER	—	1	—
ADF A HF	* 1	* 1	* 260
FIRE CONTROL RADAR AND ADF CWI	30	120	120
AN/ALQ-119	—	6	6
AN/ALQ-131	—	15	15
AN/ALQ-176	—	6	6
AN/ALQ-184	—	31	6
AN/ALQ-188	—	6	6
QRC-80-01	—	6	6

* Minimum safe distance is distance from aircraft surface.

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Figure 3-3. Hazardous Radiation and Temperature Levels.

CHAPTER 6

DIMENSIONS AND AREAS

6.1 GENERAL.

This section presents the aircraft dimensions, areas, zones, and access door and panel data. The information is to be used in conjunction with other manuals of the organizational maintenance manual set.

6.2 DIMENSIONS AND AREAS.

Dimensions and areas provide information on aircraft length, wingspan, vertical height, ground clearances, control surface travel distances, and other data which may be pertinent to aircraft maintenance and service operations. The principal dimensions, areas, and basic data for the aircraft are shown in Figure 6-1.

6.2.1 Reference Planes. Three basic reference planes are used to establish reference points, reference lines, and dimensions on the aircraft. The reference planes are the FS, BL, and WL.

6.2.1.1 Fuselage Station. The fuselage station (FS) planes are perpendicular to the aircraft centerline. The basic starting point for fuselage station measurement is at fuselage station zero (FS 0.0), which is located 5.0 inches aft of the forward end of the nose radome. Fuselage stations are scaled in inches from fuselage station zero toward the aft end of the aircraft. For example, FS 243.0 is 243.0 inches aft of FS 0.0.

6.2.1.2 Buttock Line. The buttock line (BL) planes are parallel to the vertical centerline of the aircraft. The basic starting point for buttock line measurement is at buttock line zero (BL 0.0), which is located at the vertical centerline of the aircraft. Buttock lines are scaled in inches from buttock line zero outboard toward the wingtip on both the right and left sides of the vertical centerline. For example, BL 20.0 is 20.0 inches outboard from BL 0.0 on either the right or left side of the aircraft.

6.2.1.3 Waterline. The waterline (WL) planes are parallel to true horizontal (static ground plane) and are perpendicular to the fuselage station and buttock line planes. The basic starting point for waterline measurement is waterline zero (WL 0.0), which is located below the aircraft static ground plane. Waterlines are scaled in inches from waterline zero in the upward direction. For example, WL 65.0 is 65.0 inches above WL 0.0. The centerline of thrust and the wing chord plane have been designated as WL 91.0. The top edge of the vertical stabilizer is at WL 217.50.

6.2.1.3.1 Fuselage stations, buttock lines, and waterlines are used as reference lines for the wings as well as for the fuselage. Since the wings have zero degrees dihedral angle and zero degrees incidence angle, the wing chord plane is a waterline plane (WL 91.0). Therefore, the fuselage stations and buttock lines are perpendicular to the wing chord plane and are used as wing stations and span stations, respectively.

WING	
AREA	300 SQ FT
SPAN	30 FT 0 IN.
(WITH LAUNCHERS)	31 FT
(WITH MISSILES)	32 FT 10 IN.
ASPECT RATIO	3.0
TAPER RATIO	0.2275
SWEEP (LE)	40°
DIHEDRAL	0°
AIRFOIL	NACA 64A204
INCIDENCE	0°
TWIST	
AT S.S. 54.0	0°
AT S.S. 180.0	3°
FLAPERON AREA	31.32 SQ FT
LE FLAP AREA	36.71 SQ FT

19 159

HORIZONTAL TAIL (MOVEABLE)	
AREA	49.0 SQ FT
SPAN	18 FT 0.34 IN.
ASPECT RATIO	2.598
TAPER RATIO	0.3
SWEEP (LE)	40°
DIHEDRAL	-10°
AIRFOIL	
AT ROOT	6.0% BICONVEX
AT TIP	3.5% BICONVEX

20 160

HORIZONTAL TAIL (MOVEABLE)	
AREA	63.70 SQ FT
SPAN	18 FT 6 IN.
ASPECT RATIO	2.114
TAPER RATIO	0.390 (THEO)
SWEEP (LE)	40°
DIHEDRAL	-10°
AIRFOIL	
AT ROOT	6.0% BICONVEX
AT TIP	3.5% BICONVEX

VERTICAL TAIL	
AREA	54.75 SQ FT
ASPECT RATIO	1.294
TAPER RATIO	0.437
SWEEP (LE)	47.5°
AIRFOIL	
AT ROOT	5.3% BICONVEX
AT TIP	3.0% BICONVEX
RUDDER AREA	11.65 SQ FT

VENTRAL FIN (EACH)	
AREA	8.03 SQ FT
SPAN	23.356 IN. THEO (27.5 IN. ACTUAL)
ASPECT RATIO	0.472 (THEO)
TAPER RATIO	0.760 (THEO)
SWEEP (LE)	30°
DIHEDRAL (CANT)	15° OUTBOARD
AIRFOIL	
AT ROOT	3.0% MODIFIED WEDGE
AT TIP	CONSTANT 0.03R

SPEEDBRAKE	
AREA	14.26 SQ FT
(4 ELEMENT CLAMSHELL 3.565 SQ FT EACH)	

CONTROL SURFACE TRAVEL (NORMAL TO HINGE ℄)	
FLAPERON	20° UP 20° DOWN
LE FLAP	0° UP 30° DOWN (25° DOWN STREAMWISE)
19 159 HORIZONTAL TAIL	25° UP 25° DOWN
20 160 HORIZONTAL TAIL	21° UP 21° DOWN
RUDDER	30° (LEFT AND RIGHT)
SPEEDBRAKE	60° UP AND DOWN

LANDING GEAR	
MAIN GEAR	
TIRE SIZE	25.5 X 8-14
STROKE	10.5 IN.
STATIC ROLLING RADIUS	11.0 IN.
NOSE GEAR	
TIRE SIZE	18 X 5.7-8
STROKE	10.0 IN.
STATIC ROLLING RADIUS	7.5 IN.
PROPULSION	
94 ENGINE	F100-PW-200
95 ENGINE	F100-PW-220
THRUST	25,000 LB CLASS
ENGINE COMPRESSOR FACE DIAMETER	34.8 IN.
ENGINE LENGTH	191.15 IN.

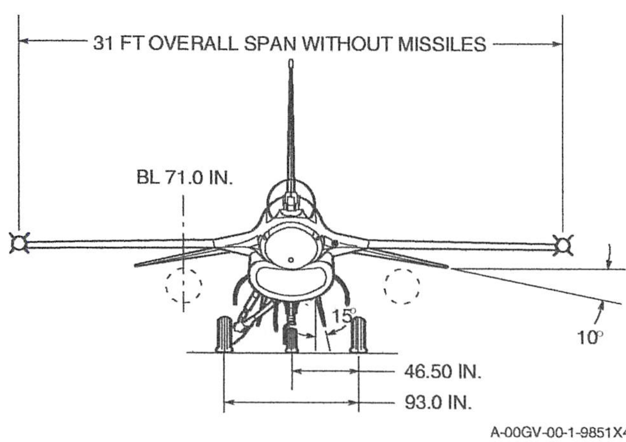

Figure 6-1. Dimensions, Areas, and Basic Data. (Sheet 1 of 2)

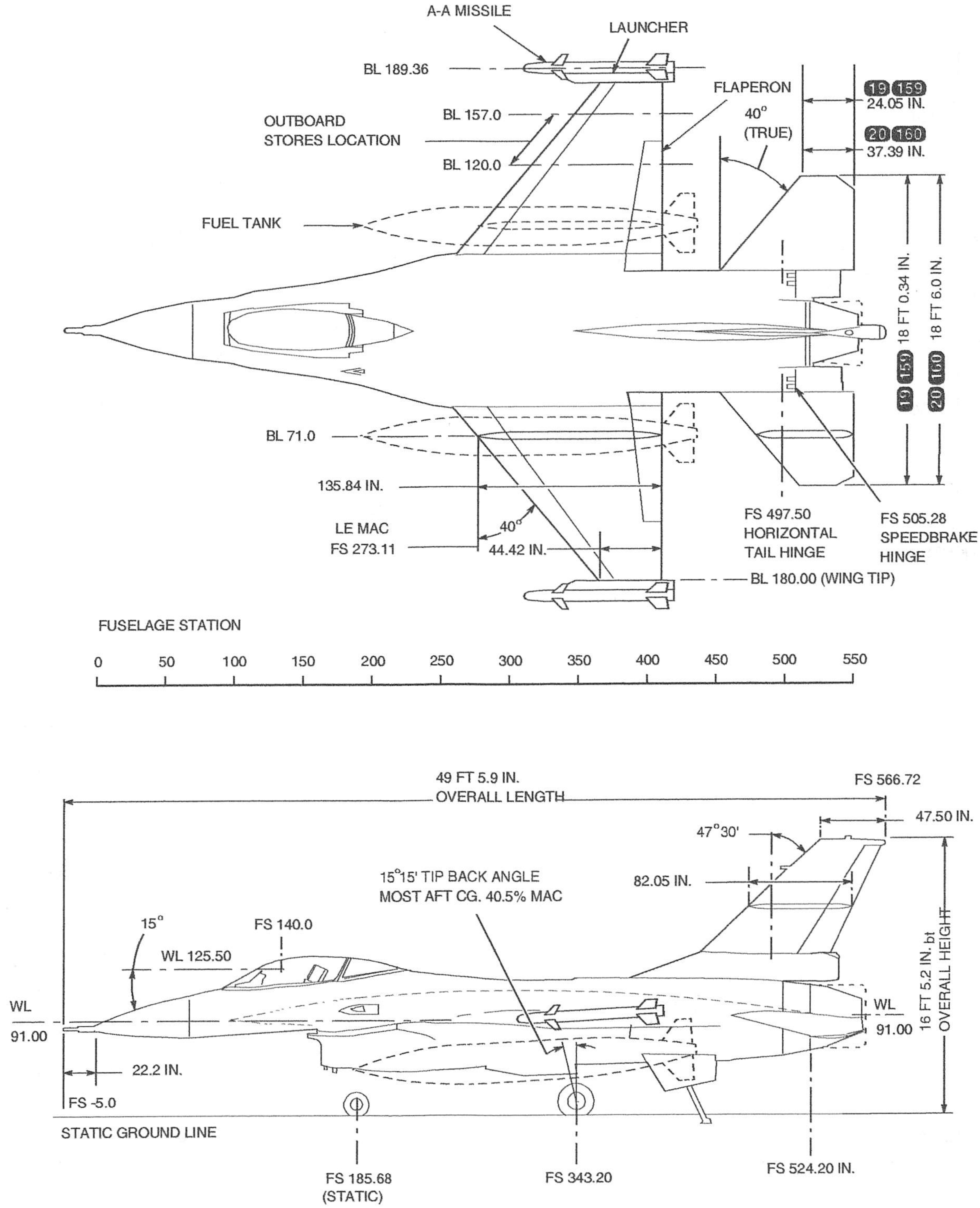

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Figure 6-1. Dimensions, Areas, and Basic Data. (Sheet 2)

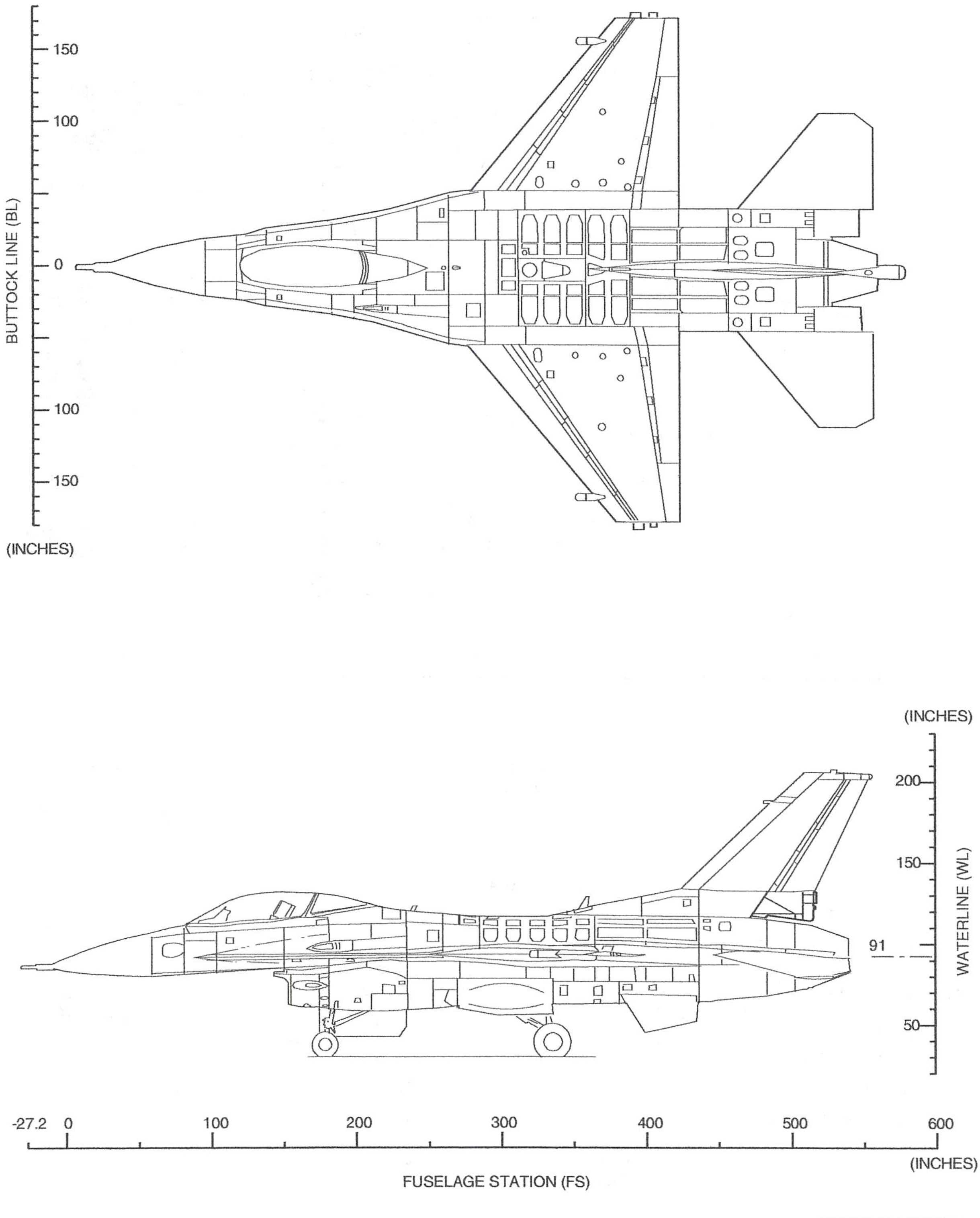


Figure 6-2. Reference Planes.

6.3 AIRCRAFT ZONING.

The zoning of the work areas on the aircraft (Figure 6-3) is basically established in accordance with its modular-type assembly. The general aircraft zone is designated as zero. The forward fuselage is zones 1 and 2; the center fuselage is zone 3; the aft fuselage is zone 4; the left wing is zone 5; the right wing is zone 6; the nose landing gear area is zone 7; the main landing gear area is zone 8; and the canopy, cockpit, and seat are zone 9.

6.3.1 Forward Fuselage, Zone 1. The forward fuselage, zone 1, starts at the forward tip of the air data probe (FS -27.2) and extends aft to FS 110.5. The area includes the nose radome, the forward equipment bay, and the lower equipment bay.

6.3.2 Forward Fuselage, Zone 2. The forward fuselage, zone 2, starts at FS 110.5 and extends aft to the aft end of forward fuselage module at FS 243.0. The zone includes the aft equipment bay (between FS 110.5 and FS 189.0), the F1 fuel tank, the gun port area, and the engine air inlet.

6.3.3 Center Fuselage, Zone 3. The center fuselage, zone 3, starts at FS 243.0 and extends to the aft end of the center fuselage module at FS 373.8. The zone includes the F2 fuel tank, reservoir fuel tanks, air-conditioning system equipment bay, right aft avionics equipment bay, gun and ammunition drum installation area, engine pressure face, in-flight refueling receptacle, hydraulic system reservoirs, and the leading edge flap drive unit.

6.3.4 Aft Fuselage, Zone 4. The aft fuselage, zone 4, starts at FS 373.8 and extends to the aft end of the aircraft. The zone includes the engine cavity, aft fuel tank, speedbrakes, ventral fins, vertical stabilizer, rudder, left and right horizontal stabilizers, tail hook, and the integrated servoactuators.

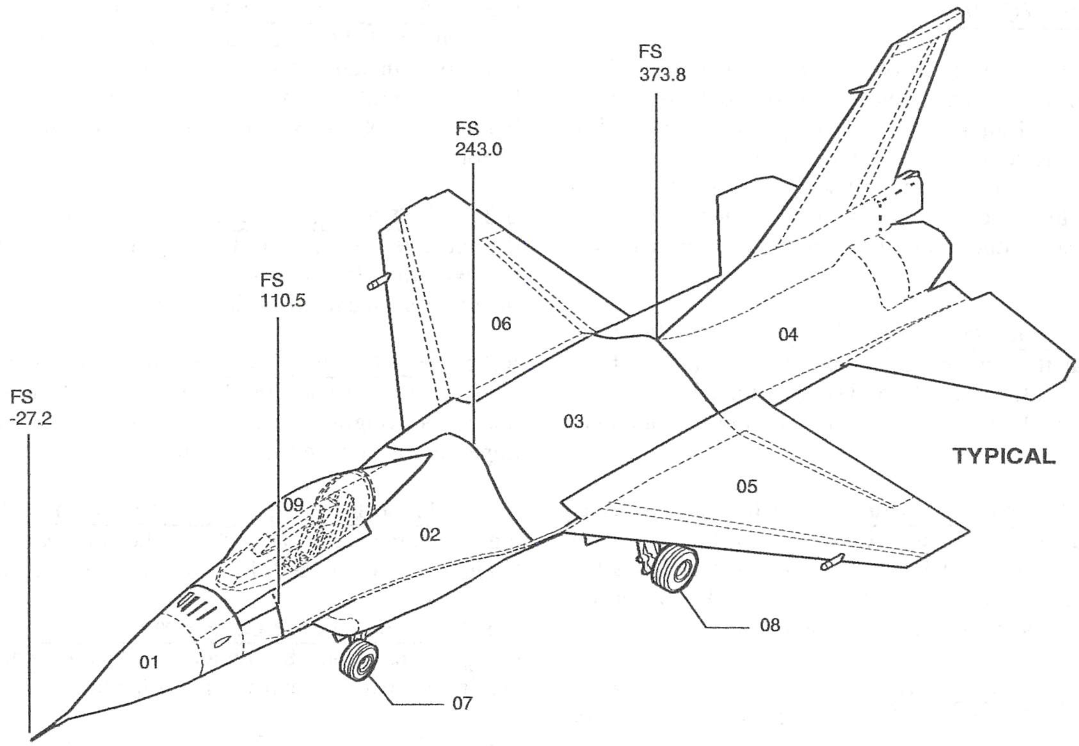
6.3.5 Left Wing, Zone 5. The left wing, zone 5, contains the entire left wing from the wing/fuselage intersection line to the wingtip. The leading edge flap and the trailing edge flaperon are included in this area.

6.3.6 Right Wing, Zone 6. The right wing, zone 6, contains the entire right wing from the wing/fuselage intersection line to the wingtip. The leading edge flap and the trailing edge flaperon are included in this area.

6.3.7 Nose Landing Gear Area, Zone 7. The nose landing gear area, zone 7, contains the nose landing gear, nose landing gear door, and the nose landing gear wheel well.

6.3.8 Main Landing Gear Area, Zone 8. The main landing gear area, zone 8, contains the main landing gear, main landing gear doors, and the main landing gear wheel wells.

6.3.9 Cockpit Area, Zone 9. The cockpit area is the area covered by the canopy and includes the canopy, seats, consoles, instrument panels, controls, and all other equipment located within the cockpit area.



WORK AREA	DESCRIPTION
00	GENERAL AIRCRAFT.
01	NOSE RADOME, FORWARD EQUIPMENT BAY, LOWER EQUIPMENT BAY. (FS -27.2 TO FS 110.5)
02	AFT EQUIPMENT BAY, F-1 FUEL TANK, AND ENGINE AIR INLET. (FS 110.5 TO 243.0)
03	F-2 FUEL TANK, RESERVOIR TANKS, AIR-CONDITIONING EQUIPMENT BAY, RIGHT AFT AVIONICS BAY, ENGINE PRESSURE FACE, AND LEADING EDGE FLAP DRIVE UNIT. (FS 243.0 TO FS 373.8)
04	ENGINE CAVITY, AFT FUEL TANK, SPEEDBRAKES, VENTRAL FINS, VERTICAL STABILIZER, RUDDER, AND LEFT AND RIGHT HORIZONTAL STABILIZERS. (FS 373.8 TO AFT END OF AIRCRAFT)
05	LEFT WING, LEADING EDGE FLAP, AND FLAPERON.
06	RIGHT WING, LEADING EDGE FLAP, AND FLAPERON.
07	NOSE LANDING GEAR, DOOR AND WHEEL WELL.
08	MAIN LANDING GEAR, DOORS AND WHEEL WELLS.
09	CANOPY, COCKPIT AND SEAT.

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Figure 6-3. Work Area Zones.

6.4 ACCESS DOORS AND PANELS.

Access doors and panels provide the means for access to internal aircraft equipment. Access doors and panels are located in appropriate areas as required for maintenance and servicing operations. The terms access door and access panel as used in the maintenance manual set are defined in the following paragraphs.

6.4.1 Access Doors. Access doors are normally hinged on one side and secured in the closed position by means of a latch mechanism or quick-acting fasteners. Access doors are used in areas which require frequent or quick access. In some instances, one or two small hinged access doors are installed in a larger access door to provide quick access for inspection or servicing without opening the larger door.

6.4.2 Access Panels. Access panels are usually structural panels which are secured by means of quick-acting fasteners or by conventional screws. Access panels are used in areas which require less frequent access or areas with critical sealing requirements, such as the fuel tanks.

6.4.3 Access Door and Panel Identification Numbers. Each access door and panel has a four-digit identification number. The first digit of the number is the aircraft work area in which the panel is located. The second digit denotes the panel location within the work area as to left side (1), right side (2), lower surface (3), or upper surface (4). The last two digits form the individual door or panel identification number with even numbers used for doors and panels on the right side of the aircraft and odd numbers used for doors and panels on the left side of the aircraft.

2406

- Identified door/panel individually and establishes location; odd numbers are left side of aircraft and even numbers are right side of aircraft
- Identifies location of door/panel within work area; No. 1 is left side, No. 2 is right side, No. 3 is lower surface, and No. 4 is upper surface
- Identifies work area zone in which door/ panel is located

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Door/panel 2406 can be described as a door/panel in the forward fuselage work zone (2), on the upper surface (4), and on the right side of the aircraft (06).

6.4.4 Access Door and Panel Locations. The locations of the access doors and panels on the aircraft are shown in Figure 6-4 through Figure 6-7. Table 6-1 lists the access doors and panels in identification number order, gives the quantity and type of fasteners contained in the door or panel, shows the approximate time required to open and close the door or remove and reinstall the panel, and provides the part number and nomenclature for each door and panel.

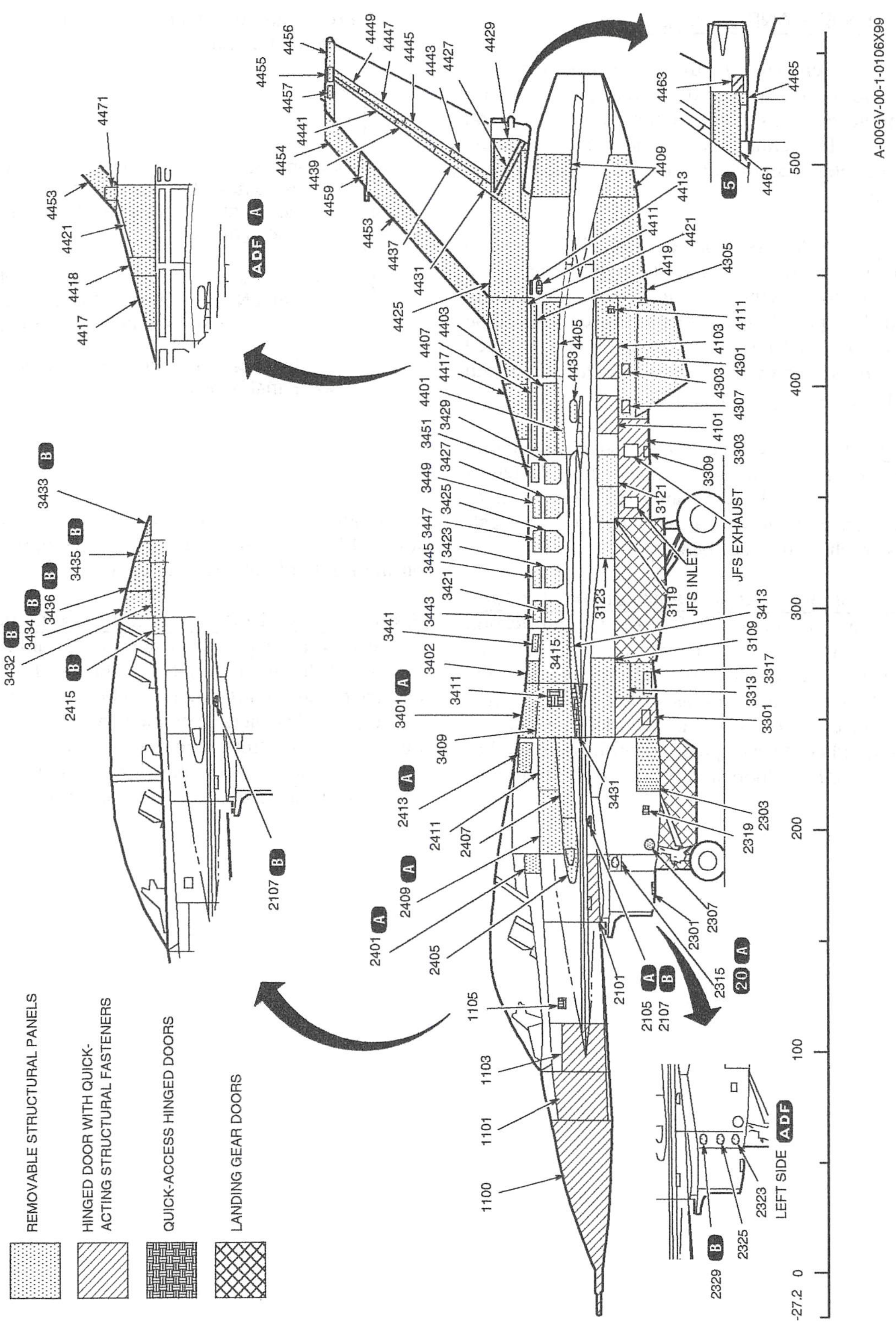

Figure 6-4. Access Doors and Panels (Left Side).

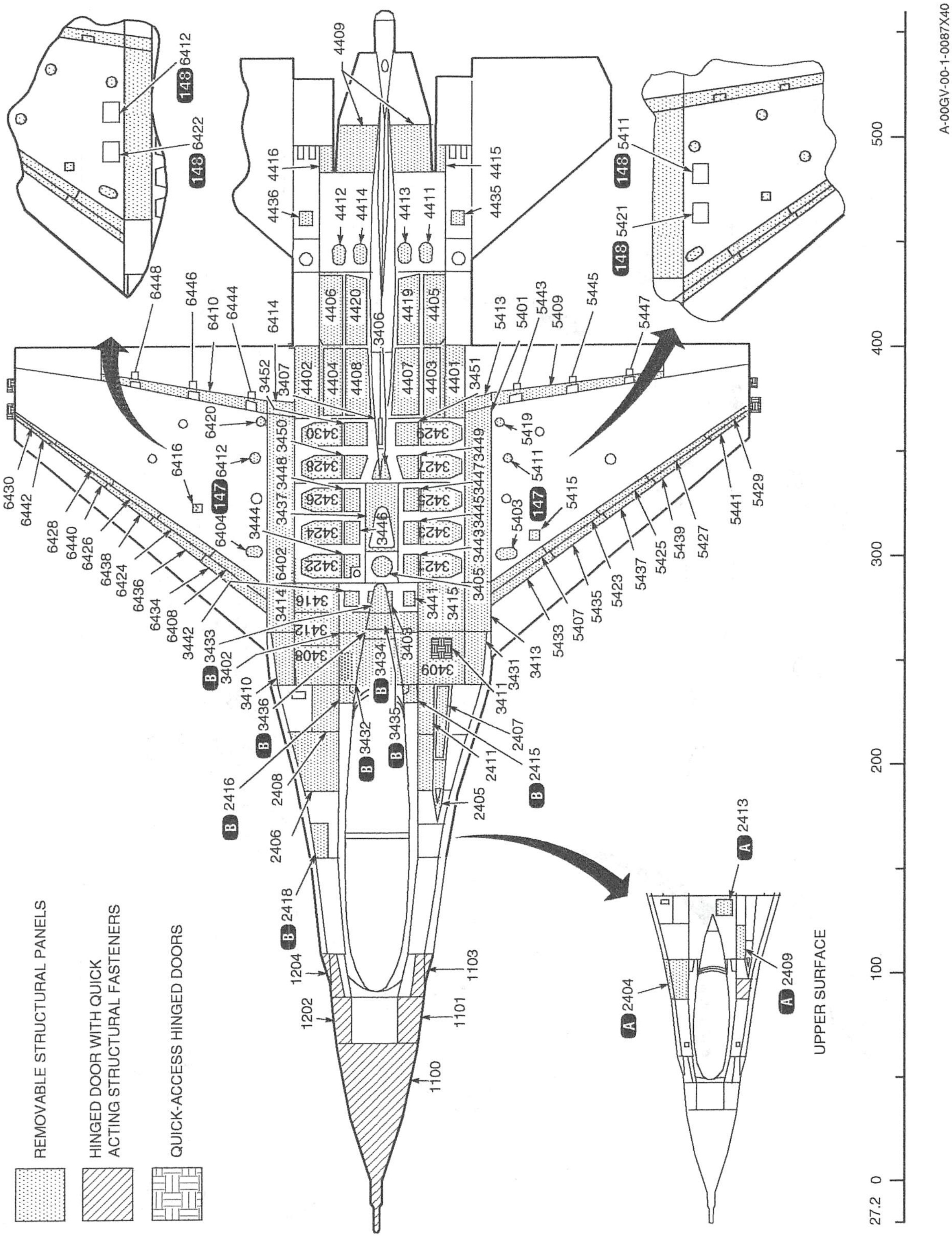

Figure 6-5. Access Doors and Panels (Upper Surface).

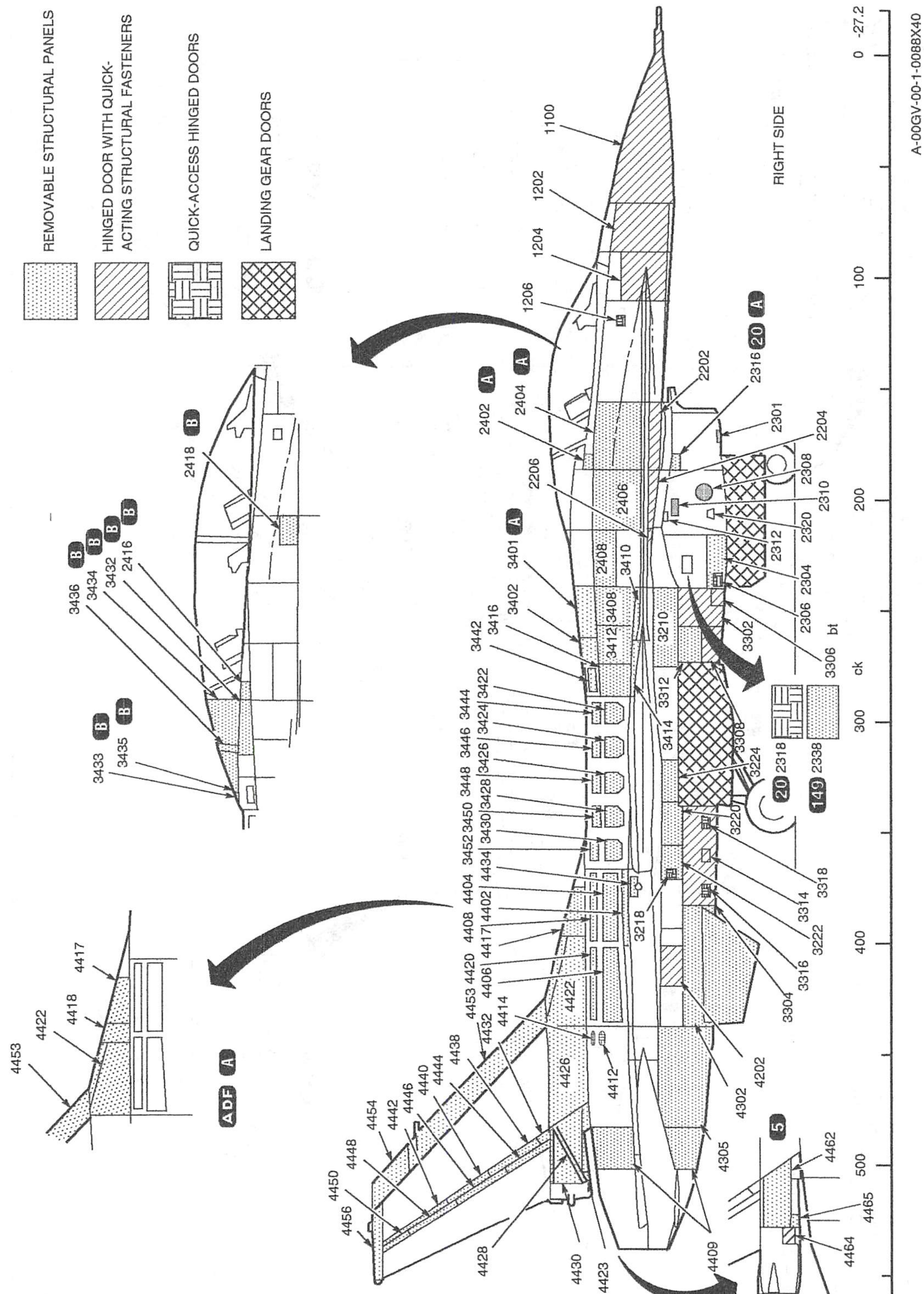

Figure 6-6. Access Doors and Panels (Right Side).

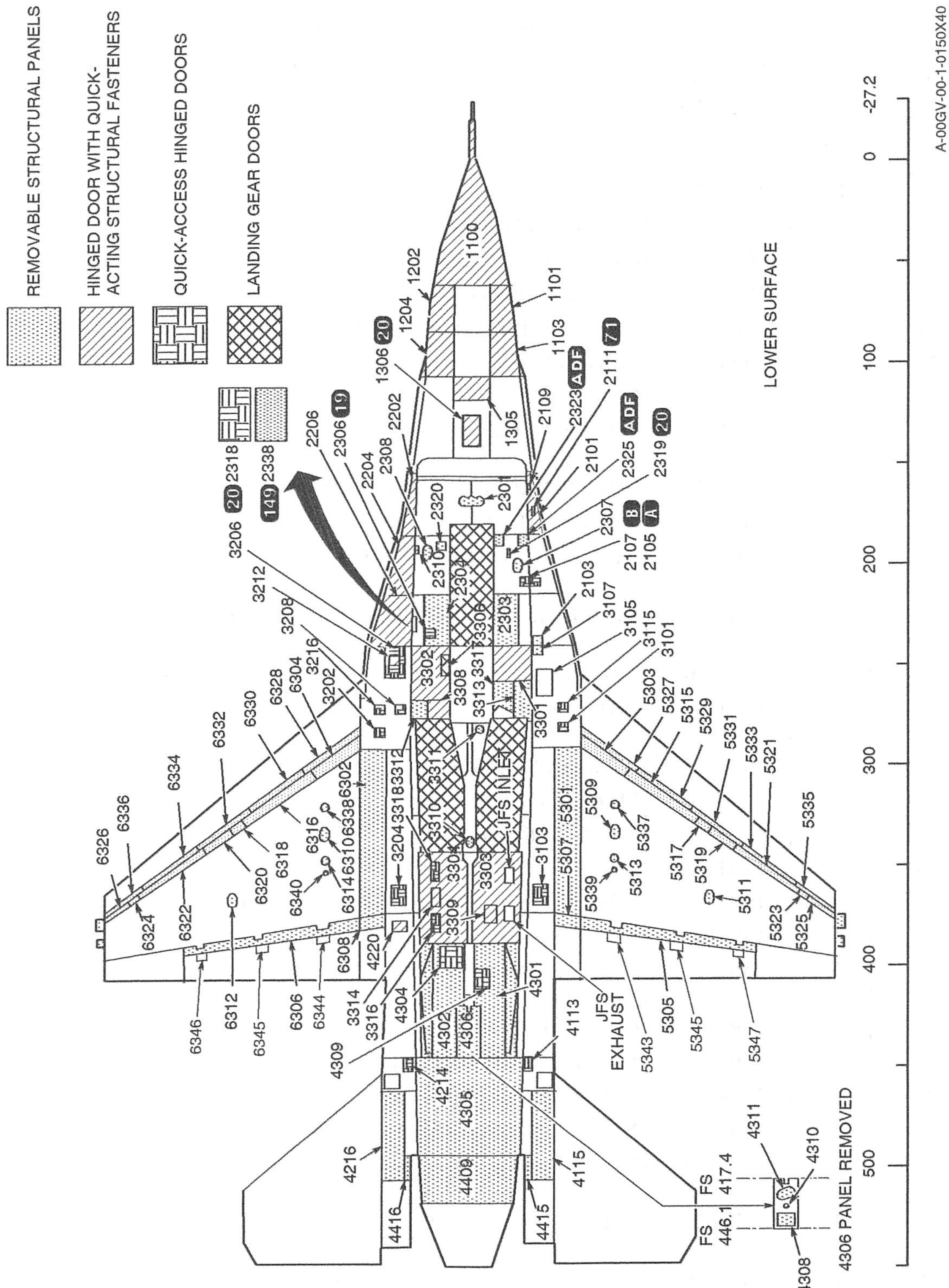

Figure 6-7. Access Panels and Doors (Lower Surface).

Table 6-1. Access Doors and Panels.

ACCESS NUMBER	FASTENERS		DRAWING NUMBER	NOMENCLATURE
	NO.	TYPE*		
1100	4	L	16B1500	NOSE RADOME
1101	14	T	16B1510	FWD EQUIPMENT BAY DOOR
1103	16	T	16B1520	SIDE ACCESS DOOR
1105	1	L	16K0651	CANOPY EMERGENCY ACCESS DOOR
1202	14	T	16B1510	FWD EQUIPMENT BAY DOOR
1204	16	T	16B1520	SIDE ACCESS DOOR
1206	1	L	16K0651	CANOPY EMERGENCY ACCESS DOOR
1305	20	T	16B1530	LOWER ACCESS DOOR
20 1306	57	T	16B1531	LOWER NACELLE ACCESS PANEL
2101	20	T	16B1580	LOWER STRAKE DOOR
2103	14	B	16B1575	GUN ADJUST ACCESS PANEL
A 2105	1	L	16B1578	AIR CONDITIONING GROUND SERVICE DOOR
B 2107	1	L	16B2506	AIR CONDITIONING GROUND SERVICE DOOR
2109	2	L	16B1581	VIDEO TAPE CARTRIDGE DOOR
71 2111	1	L	16B1585	IFF ACCESS DOOR
2202	20	T	16B1580	LOWER STRAKE DOOR
2204	21	T	16B1582	RIGHT STRAKE DOOR
2206	18	T	16B1583	LOWER STRAKE DOOR
2301	20	B	16B4502	LOWER INLET STRUT ACCESS PANEL
2303	46	T	16B4501	AVIONICS BAY ACCESS PANEL
2304	44	T	16B4505	NACELLE AVIONICS BAY ACCESS PANEL
37 2306	1	L	16B4505	GROUND ELECTRICAL POWER DOOR
2307	5	B	16B4503	NLG TRUNNION PIN ACCESS PANEL
2308	5	B	16B4503	NLG TRUNNION PIN ACCESS PANEL
2310	10	B	16B4510	NACELLE ELECTRICAL ACCESS PANEL
2312	4	B	16B4510	EPU INDICATOR PANEL
20 A 2315	40	T	16B4626	UPPER NACELLE ACCESS PANEL
20 A 2316	40	T	16B4626	UPPER NACELLE ACCESS PANEL
20 2318	2	L	16B4513	GROUND ELEC POWER DOOR

Table 6-1. Access Doors and Panels - Continued.

AC-CESS NUM-BER	FASTENERS		DRAWING NUMBER	NOMENCLATURE
	NO.	TYPE*		
20 2319	7	B	16B4512	LEFT NACELLE ELECTRICAL ACCESS PANEL
20 2320	7	B	16B4512	RIGHT NACELLE ELECTRICAL ACCESS PANEL
ADF 2323	6	B	16B4504	INLET AIFF ACCESS COVER FS 185.45
ADF 2325	6	B	16B4504	INLET AIFF ACCESS COVER FS 185.45
ADF B 2329	8	B	16B4506	UPPER INLET AIFF ACCESS COVER FS 185.45
149 2338	8	S	16B4515	ELECTRICAL ACCESS COVER
A 2401	13	B	16B1321	HINGE ARM ACCESS PANEL
A 2402	13	B	16B1321	HINGE ARM ACCESS PANEL
A 20 2404	22	T	16B1552	SIDE ACCESS DOOR
A 19 2404	31	T	16B1552	SIDE ACCESS DOOR
2405	2	B	16S110	GUN PORT ACCESS PANEL
2406	35	T	16B1555	STRAKE ACCESS PANEL
2407	34	S	16B1554	GUN TROUGH ACCESS PANEL
2408	30	T	16B1574	UPPER FUSELAGE ACCESS PANEL
A 2409	28	S	16B1556	AIR CONDITIONING ACCESS PANEL
2411	24	S	16B1556	AIR CONDITIONING ACCESS PANEL
A 2413	51	S	16B1560	FUEL TANK ACCESS PANEL
B 2415	13	S	16K2515	CANOPY HINGE ARM COVER
B 2416	13	S	16K2515	CANOPY HINGE ARM COVER
B 2418	14	T	16B2504	SIDE ACCESS PANEL
3101	2	L	16B5562	STRAKE HYDRAULIC ACCESS DOOR
3103	1	L	16B5526	REFUEL ACCESS DOOR
3105			16S132	GUN PURGE DOOR
3107	17	S	16B5529	GUN ADJUST ACCESS PANEL
3109	50	S	16B5530	SIDE ROUTING ACCESS PANEL
3115	2	L	16B5562	STRAKE HYDRAULIC ACCESS DOOR
3119	21	S	16P1901	ENGINE COMPARTMENT VENT INLET DUCT

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS NO.	FASTENERS TYPE*	DRAWING NUMBER	NOMENCLATURE
3121	21	S	16B5533	SIDE ACCESS PANEL
3123	31	S	16B5532	SIDE ACCESS PANEL
3202	2	L	16B5562	STRAKE HYDRAULIC ACCESS DOOR
3204	1	L	16B5565	DEFUEL ACCESS DOOR
3206	6	T	16B5523	AMMUNITION LOADING ACCESS DOOR
3208	2	L	16B5561	STRAKE HYDRAULIC ACCESS DOOR
3210	50	S	16B5530	SIDE ROUTING ACCESS PANEL
3212	2	T	16B5527	AIRSCOOP AND AMMUNITION BAY ACCESS DOOR
3216	2	L	16B5562	STRAKE HYDRAULIC ACCESS DOOR
3218	1	L	16B5535	ENGINE OIL GAGE DOOR
3220	21	S	16P1901	ENGINE COMPARTMENT VENT INLET DUCT PANEL
3222	21	S	16B5533	SIDE ACCESS PANEL
3224	31	S	16B5532	SIDE ACCESS PANEL
3301	31	T	16B5548	AIR-CONDITIONING DOOR
3302	31	T	16B5548	AIR-CONDITIONING DOOR
3303	43	T	16B6514	ENGINE ACCESS DOOR
3304	49	T	16B6533	ENGINE ACCESS DOOR
3306	1	L	16B5546	IFF ACCESS DOOR
3308	8	T	16B5549	LOX ACCESS DOOR
3309			16B6579	FIRE DOOR
3310	2	S	16B5542	CL STORE FUEL DROP-TANK ACCESS PANEL
3311	2	B	16B5541	CL STORE ELECTRICAL ACCESS PANEL
3312	16	T	16B5551	SIDE ACCESS PANEL
3313	20	T	16B5550	AIR-CONDITIONING ACCESS PANEL
3314			16B6577	FIRE DOOR
3316	1	L	16B6574	OIL PORT ACCESS DOOR
3317	17	B	16B5552	RAM AIR EXHAUST ACCESS PANEL
3318	1	L	16B6573	GENERATOR ACCESS DOOR
A 3401	76	T	16B5510	AMMUNITION DRUM ACCESS PANEL
3402	60	T	16B5514	FLAP DRIVE ACCESS PANEL
3403	39	B	16B5501	FUEL TANK ACCESS PANEL
3405	27	B	16B5507	FUEL TANK ACCESS PANEL
3406	34	B	16B5504	FUEL TANK ACCESS PANEL
3407	16	B	16B5505	FUEL TANK ACCESS PANEL
3408	39	T	16B5516	RIGHT STRAKE UPPER ACCESS PANEL
3409	34	T	16B5519	GUN ACCESS PANEL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS		DRAWING NUMBER	NOMENCLATURE
	NO.	TYPE*		
3410	31	T	16B5517	STRAKE UPPER ACCESS PANEL
3411	2	L	16B5534	UPPER GUN VENT DOOR
3412	33	T	16B5518	EPU BAY ACCESS PANEL
3413	29	T	16B5513	STRAKE UPPER ACCESS PANEL
3414	29	T	16B5513	STRAKE UPPER ACCESS PANEL
3415	48	T	16B5511	LEFT STRAKE UPPER ACCESS PANEL
3416	33	T	16B5512	RIGHT STRAKE UPPER ACCESS PANEL
3421	45	B	16B5503	FUEL TANK ACCESS PANEL
3422	45	B	16B5503	FUEL TANK ACCESS PANEL
3423	45	B	16B5503	FUEL TANK ACCESS PANEL
3424	45	B	16B5503	FUEL TANK ACCESS PANEL
3425	45	B	16B5503	FUEL TANK ACCESS PANEL
3426	45	B	16B5503	FUEL TANK ACCESS PANEL
3427	45	B	16B5503	FUEL TANK ACCESS PANEL
3428	45	B	16B5503	FUEL TANK ACCESS PANEL
3429	45	B	16B5503	FUEL TANK ACCESS PANEL
3430	45	B	16B5503	FUEL TANK ACCESS PANEL
3431	31	T	16B5517	STRAKE UPPER ACCESS PANEL
B 3432	76	T	16B5520	AMMUNITION DRUM ACCESS PANEL
B 3433	3	B	16B5894	AFT CANOPY FAIRING
B 3434	26	T	16B5891	FIXED CANOPY FAIRING
B 3435	35	T	16B5886	FIXED CANOPY FAIRING
B 3436	35	T	16B5895	FIXED CANOPY JOINT EXPANSION FAIRING
3437	91	B	16B5506	AIR REFUEL DOOR ACCESS PANEL
3441	35	B	16B5501	FUEL TANK ACCESS PANEL
3442	35	B	16B5501	FUEL TANK ACCESS PANEL
3443	35	B	16B5503	FUEL TANK ACCESS PANEL
3444	33	B	16B5503	FUEL TANK ACCESS PANEL
3445	35	B	16B5503	FUEL TANK ACCESS PANEL
3446	35	B	16B5503	FUEL TANK ACCESS PANEL
3447	35	B	16B5503	FUEL TANK ACCESS PANEL
3448	35	B	16B5503	FUEL TANK ACCESS PANEL
3449	39	B	16B5504	FUEL TANK ACCESS PANEL
3450	39	B	16B5504	FUEL TANK ACCESS PANEL
3451	40	B	16B5504	FUEL TANK ACCESS PANEL
3452	40	B	16B5504	FUEL TANK ACCESS PANEL
4101	7	T	16B6575	7TH STAGE CONNECTOR ACCESS DOOR

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS NO.	FASTENERS TYPE*	DRAWING NUMBER	NOMENCLATURE
4103	7	T	16B6568	13TH STAGE AND THROTTLE ACCESS DOOR
4111	1	L	16B6570	CENC REGULATOR FLAG ACCESS DOOR
4113	1	L	16B6553	ENGINE MOUNT ACCESS DOOR
4115	103	B	16B6596	HORIZONTAL STABILIZER ACTUATOR ACCESS PANEL
4202	7	T	16B6568	13TH STAGE AND THROTTLE ACCESS DOOR
4214	1	L	16B6553	ENGINE MOUNT ACCESS DOOR
4216	103	B	16B6596	HORIZONTAL STABILIZER ACTUATOR ACCESS PANEL
4220	2	T	16B6580	FUEL VALVE ACCESS DOOR
4301	117	B	16B6592	ENGINE ACCESS PANEL
4302	117	B	16B6507	ENGINE ACCESS PANEL
4303	1	T	16B6589	13TH STAGE CONNECTOR ACCESS DOOR
4304	2	L	16B6590	ENGINE FUEL LINE AND FUEL STRAINER ACCESS DOOR
4305	53	T	16B65102	ENGINE ACCESS PANEL
	8	B		
4306	39	B	16B6526	ARRESTING HOOK MECHANISM ACCESS PANEL
4307	1	T	16B6587	7TH STAGE CONNECTOR ACCESS DOOR
4308	12	B	16B6538	ENGINE ADJUSTMENT ACCESS PANEL
4309	22	B	16B6552	ENGINE ADJUSTMENT SCREW ACCESS PANEL
4310	5	B	16B6538	ENGINE ADJUSTMENT ACCESS PANEL
4311	6	B	16B6538	ENGINE ADJUSTMENT ACCESS PANEL
4401	52	B	16B6501	FLAPERON ACTUATOR UPPER ACCESS PANEL
4402	60	B	16B6502	FLAPERON ACTUATOR AND FUEL FLOW METER UPPER ACCESS PANEL
4403	87	B	16B6503	FUEL TANK ACCESS PANEL
4404	82	B	16B6504	FUEL TANK ACCESS PANEL
4405	95	B	16B6505	FUEL TANK ACCESS PANEL
4406	95	B	16B6525	FUEL TANK ACCESS PANEL
4407	102	B	16B6561	FUEL TANK ACCESS PANEL
4408	93	B	16B6562	FUEL TANK ACCESS PANEL
4409	4	L	16P1311	ENGINE TO FUSELAGE FAIRING
4411	21	B	16B6509	OUTBOARD CROSSOVER INSPECTION ACCESS PANEL
4412	21	B	16B6509	OUTBOARD CROSSOVER INSPECTION ACCESS PANEL
4413	21	B	16B6508	INBOARD CROSSOVER INSPECTION ACCESS PANEL
4414	21	B	16B6508	INBOARD CROSSOVER INSPECTION ACCESS PANEL
4415	25	B	16B6510	HORIZONTAL STABILIZER ATTACH ACCESS PANEL
4416	25	B	16B6510	HORIZONTAL STABILIZER ATTACH ACCESS PANEL
4417	34	B	16T7244	DORSAL FAIRINGS ANTENNA ACCESS PANEL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS NO.	FASTENERS TYPE*	DRAWING NUMBER	NOMENCLATURE
ADF A 4418	24	B	16T7244	DORSAL FAIRINGS ACCESS PANEL
4419	104	B	16B6563	FUEL TANK ACCESS PANEL
4420	100	B	16B6564	FUEL TANK ACCESS PANEL
13 4421	53	B	16T7242	FORWARD DORSAL ACCESS PANEL
ADF A 4421	47	B	16T6242	DORSAL FAIRINGS ANTENNA ACCESS PANEL
13 4422	53	B	16T7242	FORWARD DORSAL ACCESS PANEL
ADF A 4422	47	B	16T6242	DORSAL ACCESS PANEL
4423	6	B	16T7265	RUDDER ACTUATOR FAIRING PIN ACCESS PANEL
4425	55	B	16T4652	VERTICAL STABILIZER CENTER FAIRING
4426	55	B	16T4652	VERTICAL STABILIZER CENTER FAIRING
4427	15	B	16T7267	VERTICAL STABILIZER RUDDER FAIRING
4428	15	B	16T7267	VERTICAL STABILIZER RUDDER FAIRING
4429	21	B	16T7267	VERTICAL STABILIZER RUDDER FAIRING
4430	21	B	16T7267	VERTICAL STABILIZER RUDDER FAIRING
4431	2	B	16T7312	FORWARD RUDDER SEAL
4432	2	B	16T7312	FORWARD RUDDER SEAL
4433	9	B	16B6524	FLAPERON TORQUE TUBE ACCESS PANEL
4434	9	B	16B6524	FLAPERON TORQUE TUBE ACCESS PANEL
4435	22	B	16B6536	HORIZONTAL STABILIZER ACTUATOR TRIM ACCESS PANEL
4436	22	S	16B6536	HORIZONTAL STABILIZER ACTUATOR TRIM ACCESS PANEL
4437	12	S	16T7312	FORWARD RUDDER SEAL
4438	12	S	16T7312	FORWARD RUDDER SEAL
4439	10	S	16T7312	FORWARD RUDDER SEAL
4440	10	S	16T7312	FORWARD RUDDER SEAL
4441	11	S	16T7312	FORWARD RUDDER SEAL
4442	11	S	16T7312	FORWARD RUDDER SEAL
4443	10	S	16T7310	RUDDER FAIRING SEAL
4444	10	S	16T7310	RUDDER FAIRING SEAL
4445	9	S	16T7310	RUDDER FAIRING SEAL
4446	9	S	16T7310	RUDDER FAIRING SEAL
4447	9	S	16T7310	RUDDER FAIRING SEAL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS		DRAWING NUMBER	NOMENCLATURE
	NO.	TYPE*		
4448	9	S	16T7310	RUDDER FAIRING SEAL
4449	3	S	16T7310	RUDDER FAIRING SEAL
4450	3	S	16T7310	RUDDER FAIRING SEAL
13 4453	140	S	16T7272	VERTICAL STABILIZER LEADING EDGE
ADF A 4453	140	B	16T2071	VERTICAL STABILIZER HF ANTENNA
4454	60	S	16E104	VERTICAL STABILIZER ANTENNA PANEL
4455	6	S	16T7281	VERTICAL STABILIZER ANTENNA ACCESS
4456	18	S	16T7280	VERTICAL STABILIZER TIP FAIRING
4457	6	S	16T7281	VERTICAL STABILIZER ANTENNA ACCESS PANEL
4459	9	S	16E104	VERTICAL STABILIZER ANTENNA ACCESS PANEL
5 4461	57	B	16T4667	DRAG CHUTE ACCESS PANEL
5 4462	57	B	16T4667	DRAG CHUTE ACCESS PANEL
5 4463	2	L	16T4674	DRAG CHUTE ACCESS PANEL
5 4464	2	L	16T4674	DRAG CHUTE ACCESS PANEL
5 4465	22	S	16T4665	RUDDER ACTUATOR FAIRING PIN ACCESS COVER
ADF A 4471	8	B	16T2072	HF ANTENNA ACCESS DOOR
5301	50	S	16W186	WING ROOT FAIRING
5303	20	S	16W382	LEADING EDGE FLAP SEAL
5305	64	S	16W581	FLAPERON SEAL
5307	9	S	16W581	FLAPERON SEAL
5309	4	S	16W172	ELECTRICAL RECEPTACLE COVER
5311	4	S	16W172	ELECTRICAL RECEPTACLE COVER
5313	3	S	16P425	EXTERNAL TANK DISCONNECT COVER
5315	36	S	16W382	LEADING EDGE FLAP LOWER SEAL
5317	5	S	16W382	LEADING EDGE FLAP LOWER SEAL
5319	14	S	16W382	LEADING EDGE FLAP LOWER SEAL
5321	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
5323	5	S	16W382	LEADING EDGE FLAP LOWER SEAL
5325	11	S	16W382	LEADING EDGE FLAP LOWER SEAL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS NO.	FASTENERS TYPE*	DRAWING NUMBER	NOMENCLATURE
5327	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
5329	29	S	16W382	LEADING EDGE FLAP LOWER SEAL
5331	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
5333	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
5335	15	S	16W382	LEADING EDGE FLAP LOWER SEAL
5337	4	S	16S459	FWD FUEL PYLON COVER PLATE
5339	3	S	16P425	WING EXT TANK DISCONNECT COVER
5343	4	B	16W580	FAIRING FLAPERON HINGE LOWER INBOARD
5345	4	B	16W580	FAIRING FLAPERON HINGE LOWER CENTER
5347	4	B	16W580	FAIRING FLAPERON HINGE LOWER OUTBOARD
5401	51	S	16W184	WING ROOT FAIRING
5403	16	S	16W170	WING FUEL SYSTEM ACCESS PANEL
5407	19	S	16W380	LEADING EDGE FLAP UPPER SEAL
5409	64	S	16W581	FLAPERON SEAL
147 5411	12	S	16W170	WING FUEL SYSTEM ACCESS PANEL
148 5411	30	S	16W176	WING UPPER SKIN COVER
5413	9	S	16W581	FLAPERON SEAL
5415	4	S	16W170	WING FUEL SYSTEM ACCESS PANEL
5419	6	S	16W170	WING FUEL SYSTEM ACCESS PANEL
148 5421	22	S	16W176	WING UPPER SKIN COVER
5423	30	S	16W380	LEADING EDGE FLAP UPPER SEAL
5425	23	S	16W380	LEADING EDGE FLAP UPPER SEAL
5427	18	S	16W380	LEADING EDGE FLAP UPPER SEAL
5429	19	S	16W380	LEADING EDGE FLAP UPPER SEAL
5433	34	S	16W380	LEADING EDGE FLAP UPPER SEAL
5435	46	S	16W380	LEADING EDGE FLAP UPPER SEAL
5437	30	S	16W380	LEADING EDGE FLAP UPPER SEAL
5439	22	S	16W380	LEADING EDGE FLAP UPPER SEAL
5441	15	S	16W380	LEADING EDGE FLAP UPPER SEAL
5443	4	B	16W580	FAIRING FLAPERON HINGE UPPER INBOARD
5445	4	B	16W580	FAIRING FLAPERON HINGE UPPER CENTER
5447	4	B	16W580	FAIRING FLAPERON HINGE UPPER OUTBOARD
6302	50	S	16W186	WING ROOT FAIRING
6304	20	S	16W382	LEADING EDGE FLAP LOWER SEAL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS		DRAWING NUMBER	NOMENCLATURE
	NO.	TYPE*		
6306	64	S	16W581	FLAPERON SEAL
6308	9	S	16W581	FLAPERON SEAL
6310	4	S	16W172	ELECTRICAL RECEPTACLE COVER
6312	4	S	16W172	ELECTRICAL RECEPTACLE COVER
6314	3	S	16P425	EXTERNAL TANK DISCONNECT COVER
6316	36	S	16W382	LEADING EDGE FLAP LOWER SEAL
6318	5	S	16W382	LEADING EDGE FLAP LOWER SEAL
6320	14	S	16W382	LEADING EDGE FLAP LOWER SEAL
6322	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
6324	5	S	16W382	LEADING EDGE FLAP LOWER SEAL
6326	11	S	16W382	LEADING EDGE FLAP LOWER SEAL
6328	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
6330	29	S	16W382	LEADING EDGE FLAP LOWER SEAL
6332	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
6334	22	S	16W382	LEADING EDGE FLAP LOWER SEAL
6336	15	S	16W382	LEADING EDGE FLAP LOWER SEAL
6338	3	S	16P425	WING EXT TANK DISCONNECT COVER, RIGHT
6340	4	S	16P425	FWD FUEL PYLON COVER PLATE, RIGHT
6344	4	B	16W580	FAIRING FLAPERON HINGE LOWER INBOARD
6346	4	B	16W580	FAIRING FLAPERON HINGE LOWER CENTER
6348	4	B	16W580	FAIRING FLAPERON HINGE LOWER OUTBOARD
6402	51	S	16W184	WING ROOT FAIRING
6404	16	S	16W170	WING FUEL SYSTEM ACCESS PANEL
6408	19	S	16W380	LEADING EDGE FLAP UPPER SEAL
6410	64	S	16W581	FLAPERON SEAL
147 6412	12	S	16W170	WING FUEL SYSTEM ACCESS PANEL
148 6412	30	S	16W176	WING UPPER SKIN COVER
6414	9	S	16W581	FLAPERON SEAL
6416	4	S	16W170	WING FUEL SYSTEM ACCESS PANEL
6420	6	S	16W170	WING FUEL SYSTEM ACCESS PANEL
148 6422	36	S	16W176	WING UPPER SKIN COVER
6424	30	S	16W380	LEADING EDGE FLAP UPPER SEAL
6426	23	S	16W380	LEADING EDGE FLAP UPPER SEAL
6428	18	S	16W380	LEADING EDGE FLAP UPPER SEAL

Table 6-1. Access Doors and Panels - Continued.

ACCESS NUMBER	FASTENERS NO.	FASTENERS TYPE*	DRAWING NUMBER	NOMENCLATURE
6430	19	S	16W380	LEADING EDGE FLAP UPPER SEAL
6434	34	S	16W380	LEADING EDGE FLAP UPPER SEAL
6436	46	S	16W380	LEADING EDGE FLAP UPPER SEAL
6438	30	S	16W380	LEADING EDGE FLAP UPPER SEAL
6440	22	S	16W380	LEADING EDGE FLAP UPPER SEAL
6442	15	S	16W380	LEADING EDGE FLAP UPPER SEAL
6444	4	B	16W580	FAIRING FLAPERON HINGE LOWER INBOARD
6446	4	B	16W580	FAIRING FLAPERON HINGE LOWER CENTER
6448	4	B	16W580	FAIRING FLAPERON HINGE LOWER OUTBOARD
			16P1522	JFS INLET
			16P1524	JFS EXHAUST

* Type: L = Latch T = Tridair Fasteners S = Screw B = Bolt

6.4.5 Access Door and Panel Removal and Installation Procedures. Removal and installation procedures for the access doors and panels are contained in the applicable job guide manual(s) for the area in which the doors and panels are located. The applicable job guide TO numbers are as follows:

ACCESS DOORS AND PANELS	TO NUMBER
All access doors	1F-16( )-2-52JG-00-1
Fuselage access panels	1F-16( )-2-53JG-00-1
Vertical stabilizer access panels	
VHF antenna and panel	1F-16( )-2-23JG-20-1
Rudder seals and fairing	1F-16( )-2-27JG-20-1
Upper UHF/IFF antenna	1F-16( )-2-34JG-50-1
Wing access panels	
Flaperon seals	1F-16( )-2-27JG-10-1
Leading edge seals 16W581	1F-16( )-2-27JG-80-1
Fuel pylon wing panels	1F-16( )-2-28JG-10-1
Wing root fairings	1F-16( )-3-5

6.4.6 Missing Access Door and Access Panel Fasteners. All access door and access panel fasteners should be installed at all times to maintain operating capability. Depending on location of access doors and panels, the aircraft can be retained in service when certain fasteners are missing. The criteria for operating capability with door and panel fasteners missing are contained in TO 1F-16( )-31, MIDAS 51-08-00.

CHAPTER 7

LIFTING, SHORING, RECOVERING, AND TRANSPORTING

7.1 GENERAL.

Lifting of the aircraft can be accomplished by using aircraft tripod jacks at the fuselage jacking points or by using low profile jacks at the nose and main landing gears; if the ground surface is adequate, the aircraft can be lifted by using a four-point sling in conjunction with a mobile crane. shoring of crash-damaged aircraft is required before major repair or modification can begin. Wing and fuselage shoring stands should be used along with tripod jacks. The procedures for lifting and shoring are contained in TO 1F-16( )-2-07JG-00-1. The aircraft must be safe for maintenance (TO 1F-16( )-2-10JG-00-1).

7.2 FUSELAGE JACK POINTS.

There are three fuselage jack points designed to accept removable adapters. The jack points are located so that they provide a stable aircraft when it is elevated on jacks; the forward location is at fuselage station 88.0, buttock line 0.0 (with attach points at BL 5.0 left and right), and the aft locations are at fuselage station 374.30, buttock line 35.50. Jack pads are installed at the jack points, and the aircraft is lifted by using three tripod hydraulic jacks. (Refer to Figure 7-1.) When lowering the aircraft from fuselage jacks, place double vinyl plastic sheets or steel plates under each main landing gear to permit the wheels, as they contact the ground, to move outboard and transfer the aircraft weight to the landing gear, thereby keeping the aircraft stable.

7.3 LANDING GEAR JACK POINTS.

Normal maintenance requires the landing gear be jacked for wheel, tire, and brake changes. The nose landing gear has provisions to accept a removable jack adapter without use of tools, and the main landing gear contains integral jack pads. A 15-ton axle hydraulic jack is used to lift either nose or main landing gear. (Refer to Figure 7-2 and Figure 7-3.) Refer to TO 1F-16( )-2-32JG-40-1 for landing gear wheel jacking.

7.4 LIFTING AIRCRAFT.

To expedite movement of a disabled aircraft, integral lift points are built into the fuselage structure. A hoisting sling can be attached to the lifting points and the disabled aircraft hoisted by a mobile crane. (Refer to Figure 7-4.)

7.5 SHORING.

When a crash-damaged aircraft is at rest on jacks, additional structural stresses are imposed. To relieve these stresses, shoring is used at specified locations beneath the fuselage and wings, such as fuselage frames and wing spars. shoring the aircraft can be accomplished by using contour support stands that conform to the lower surface of the wing and fuselage at the specified locations. (Refer to Figure 7-5 and Figure 7-6.)

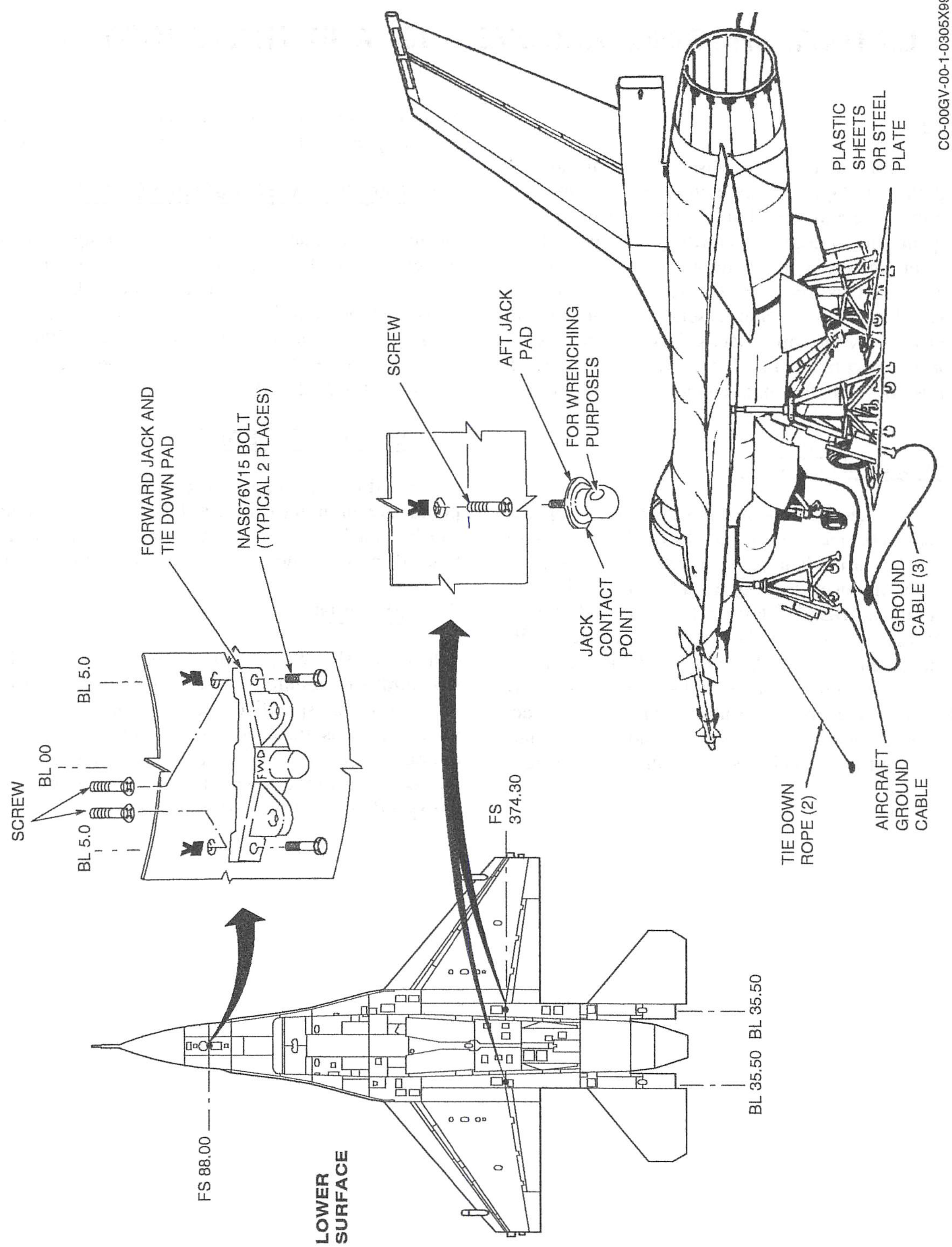

Figure 7-1. Fuselage Jack Point.

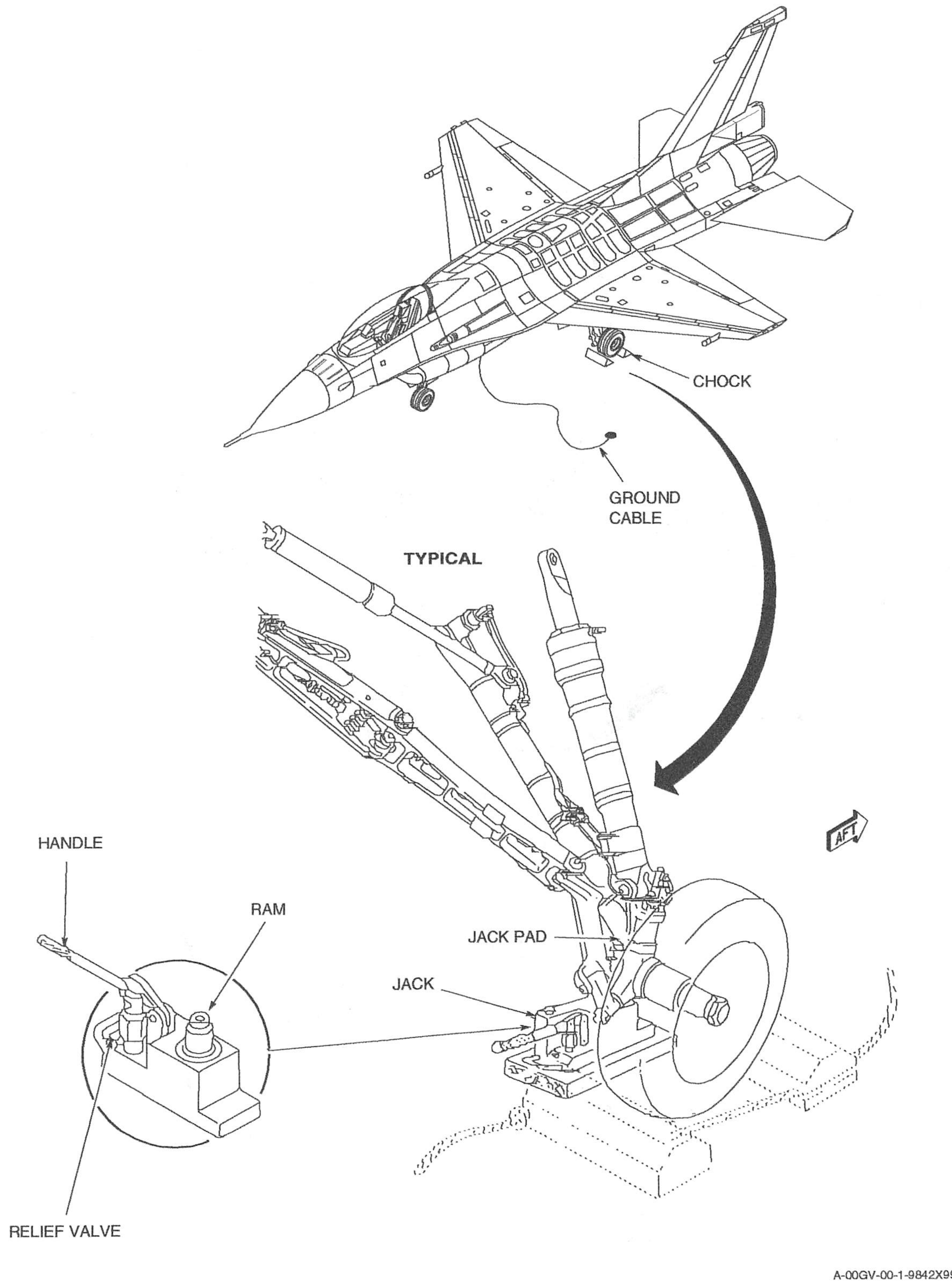

Figure 7-2. Main Landing Gear Jack Point.

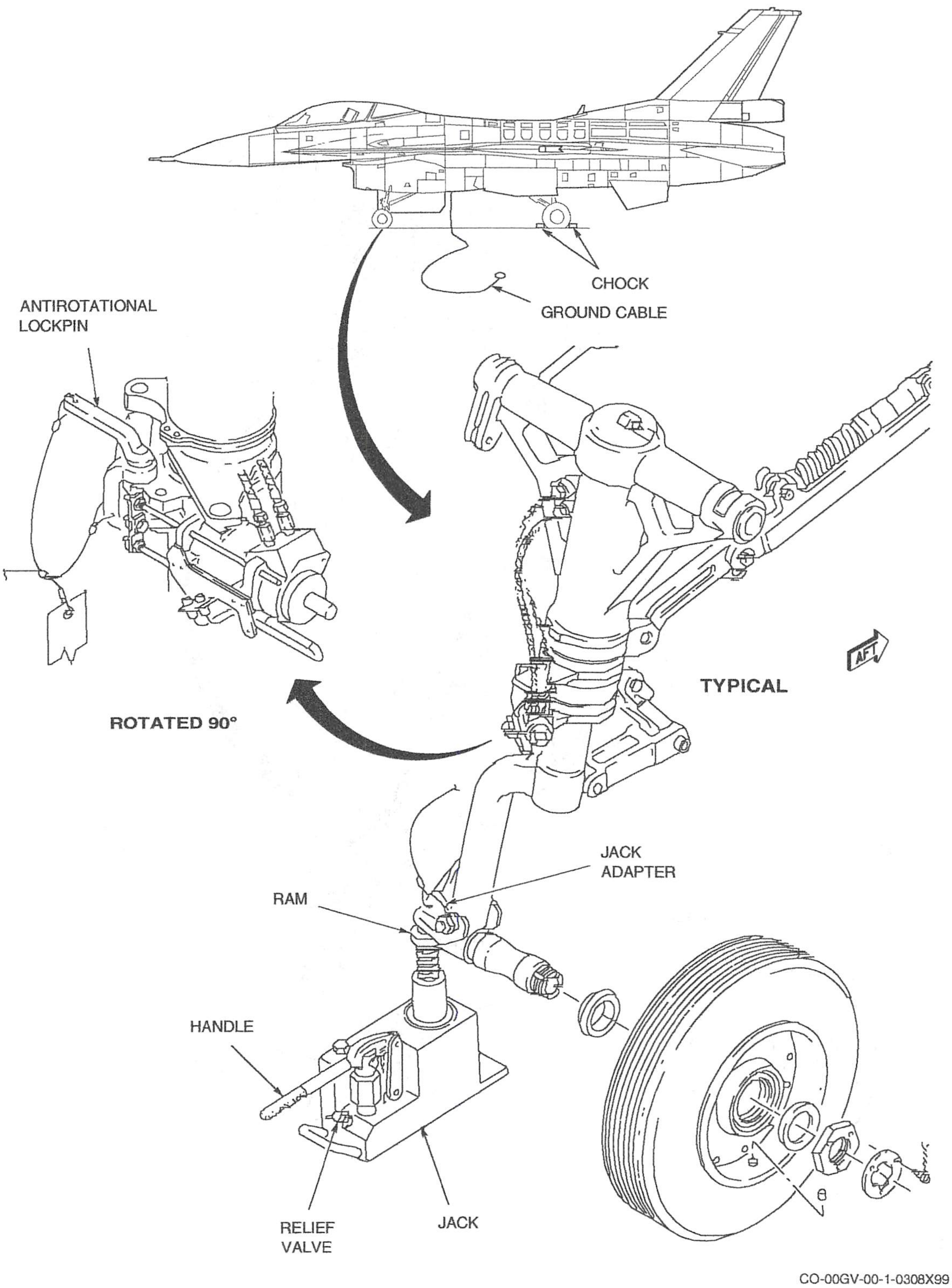

Figure 7-3. Nose Landing Gear Jack Point.

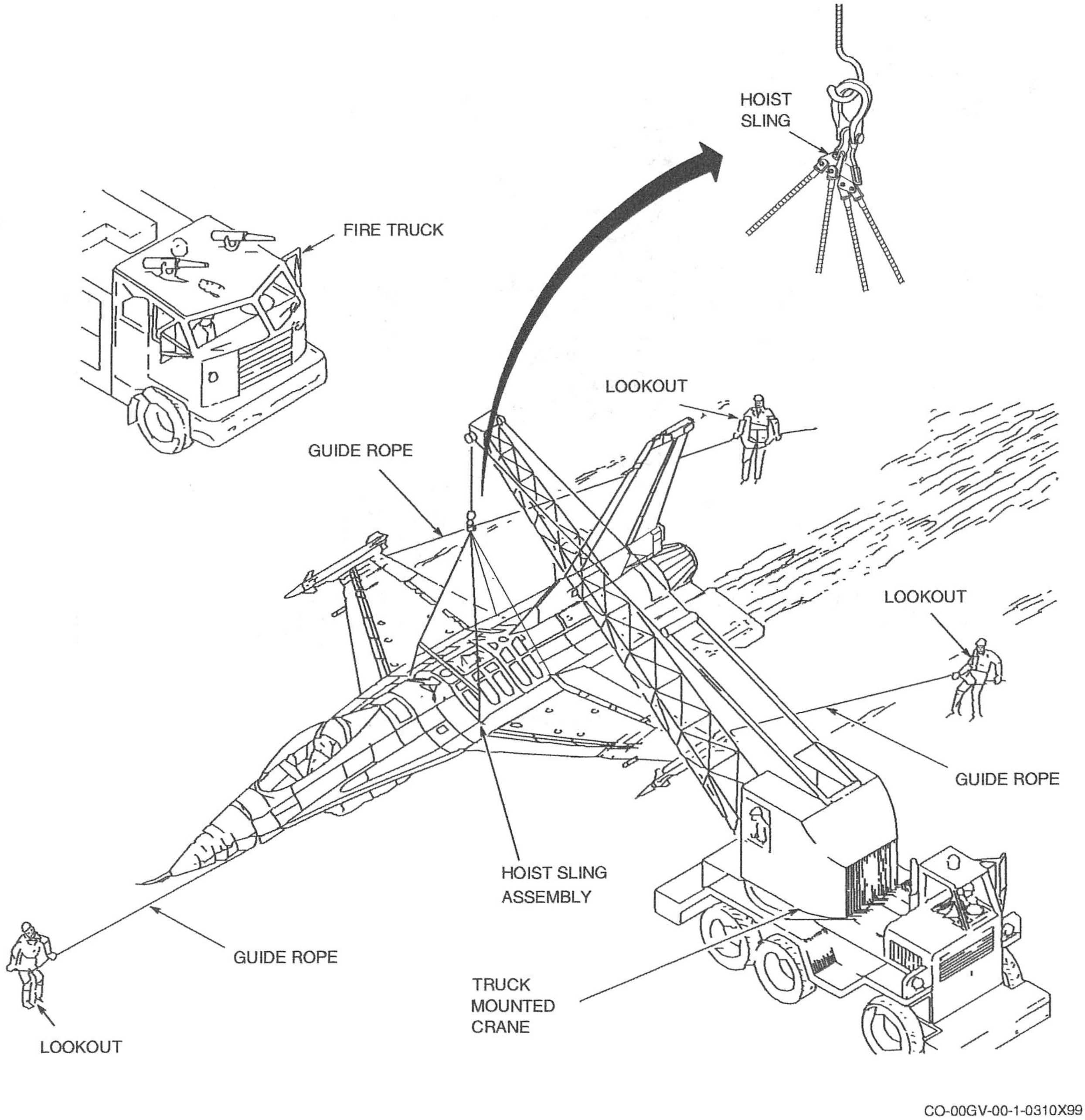

Figure 7-4. Disabled Aircraft Hoisting.

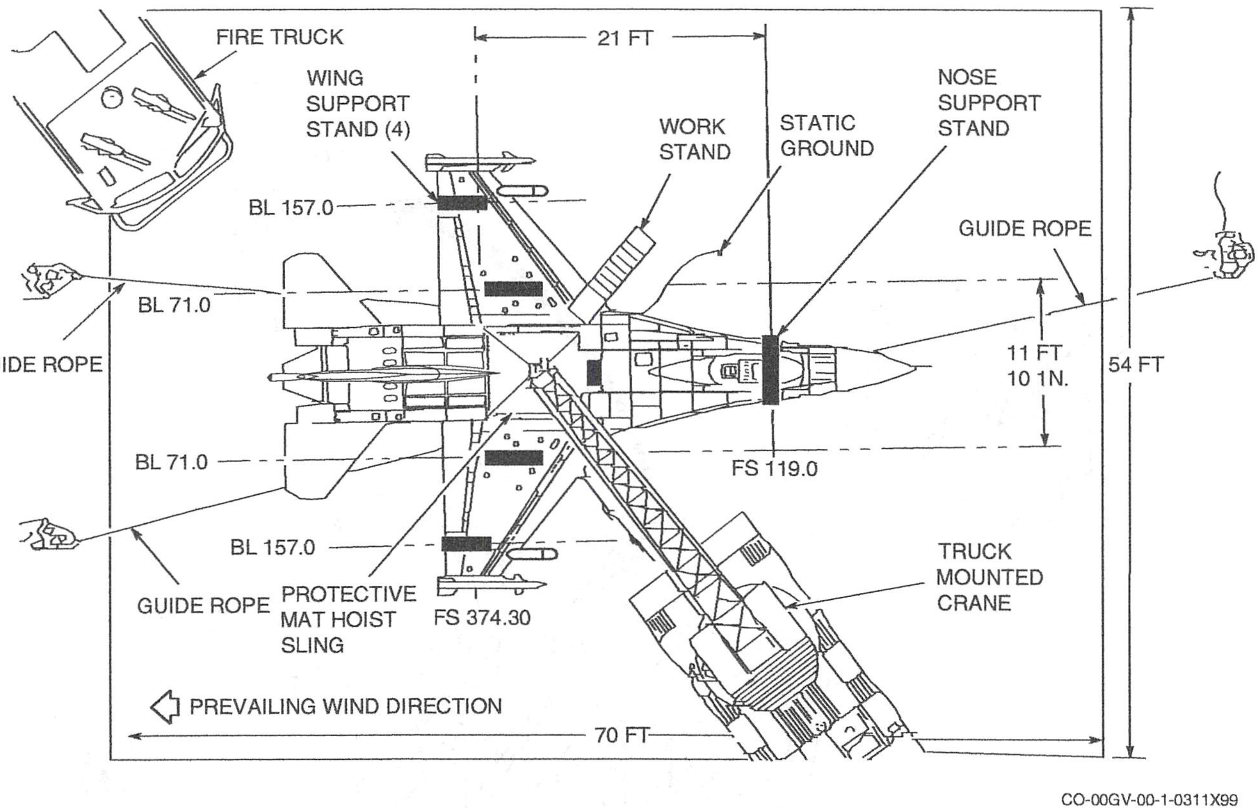

Figure 7-5. Hoisting to Support Stands.

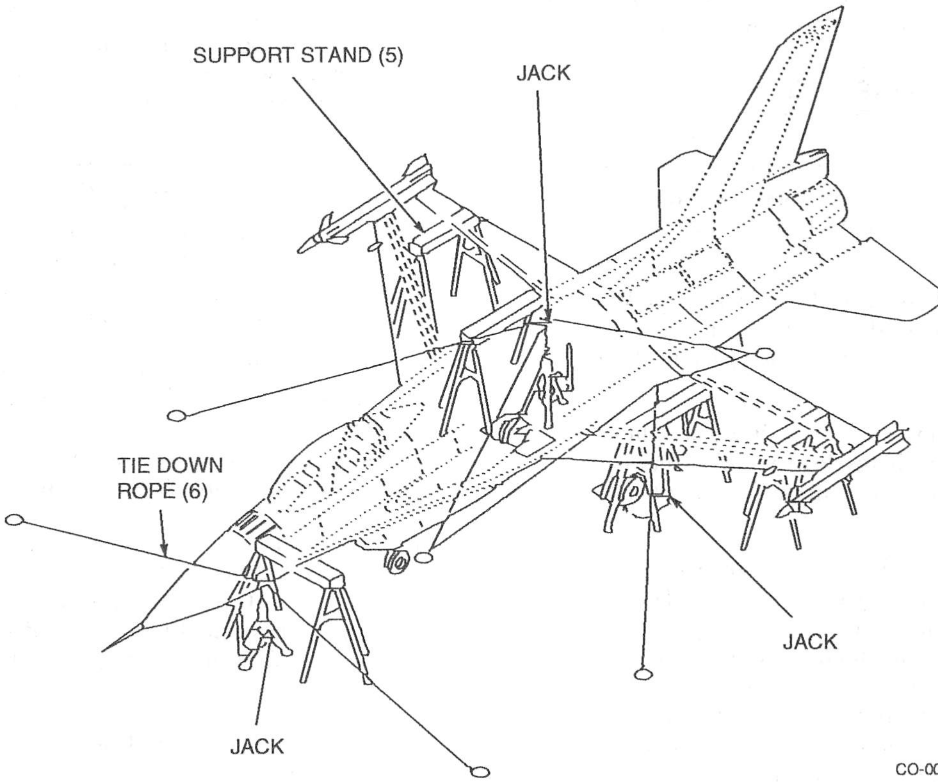

Figure 7-6. Aircraft Shored.

7.6 JACKING.

Support equipment required for jacking is located in Table 7-1.

Table 7-1. Jacking Support Equipment.

PART NO.	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
50J25178	Jack, Hydraulic Tripod, Type B-6	None	Fuselage jacks
16A11009-1	Kit Assy, Jack Pad	None	Attach to fuselage
CJ67D0250-1	Jack, Hydraulic Axle, 15-Ton	None	Wheel jack
2006510-105	Adapter Assy - Jack NLG	2006510-101	Nose landing gear wheel
8631539-01	Adapter, Jack (use with 1N2006510-101 if needed)	None	Nose landing gear wheel
16A113200L1-1	Adapter	8631539-01 (Local Manufacture)	Main landing gear wheel

Before positioning the jacks under the aircraft jack points, insure the following preparations have been accomplished:

WARNING

- Supervisor shall verify that each technician is familiar with safety conditions listed below and is briefed on positions and responsibilities; otherwise, injury to personnel or damage to aircraft may occur.
- Aircraft shall not be jacked if aircraft is parked in the open and winds are expected to exceed 30 knots; otherwise, injury to personnel or damage to aircraft may occur.
- Do not exceed the maximum lifting weight of 35,000 pounds with fuselage jacks; otherwise, injury to personnel or damage to aircraft may occur.
- Review weight and balance records and obtain gross weight and CG jack limits from TO 1F-16( )-5-2; If components are missing or have been removed from aircraft, weight and balance information regarding aircraft CG shall be calculated before lifting aircraft with fuselage jacks. Failure to comply may result in injury to personnel or damage to aircraft may occur.
- Damaged aircraft shall not be lifted if liquid oxygen converter has not been drained or removed. Failure to comply may result in injury to personnel and/or damage to aircraft.
- If components are missing or have been removed from aircraft, with exception of engine, weight and balance information regarding aircraft center of gravity shall be calculated before lifting aircraft with fuselage jacks; otherwise, injury to personnel or damage to aircraft may occur.
- Lifting aircraft shall be accomplished on flat surfaces; otherwise, injury to personnel or damage to aircraft may occur.
- All equipment not utilized shall be removed from area; otherwise, injury to personnel or damage to aircraft may occur
- Aircraft will be unstable on jacks if aft fuel cell is nearly full and forward fuel cell is nearly empty. Use holes in forward jack pads to secure nose of aircraft to ramp tiedown pads before personnel climb on aft fuselage; otherwise, injury to personnel or damage to aircraft may occur.
- Restricted area around aircraft shall be indicated by ropes and/or traffic cones and appropriate warning signs; otherwise, injury to personnel or damage to aircraft may occur.

CAUTION

- If aircraft is not located on approved hard surface, jacks shall be placed on 3/8-inch steel plates prior to lifting aircraft; otherwise, damage to equipment or aircraft may occur.
- CG will shift as attitude of aircraft changes and fuel load shifts. Ballast shall be added or fuel load adjusted as necessary for aircraft to maintain safe CG limits; otherwise, damage to equipment or aircraft may occur.

a. Aircraft jack leg pads shall be positioned on level surface and the forward jack shall be positioned with two legs aft and outboard of aircraft centerline. The two aft jacks shall be positioned with one leg aft and two legs forward of jack pad, with pump assembly on aft leg.

NOTE

Special care shall be taken to insure jack leg pads are as near level as possible to minimize jack ram binding and side loads as the ram extends.

b. Static ground cable shall be attached between aircraft and earth ground point.

c. The following removable access panels and doors shall be installed: 19 A 2404, B 2418, 3123, 3224, 3119, 3220, 3121, 3222, and 4301 or 4302. 20 A Access door 2404.

NOTE

- Panels 4301 and/or 4302 shall be installed or tacked as outlined in JG07-10-00.
- Access panels or doors are only required to be installed during jacking and lowering of aircraft. There are no access panel or door restrictions when the aircraft is static on jacks.

d. Insure safe for maintenance procedures of JG10-30-01 are followed.

e. Insure the following circuit breakers are open on forward ac power panel (access door 1305):

AIR DATA PROBE HTR

L ANGLE OF ATCK HTR

ANGLE OF ATCK HTR

PITOT STATIC P HTR

TOTAL TEMP HTR

7.7 HOISTING.

WARNING

- Normal aircraft hoisting shall not be accomplished if winds exceed 13 knots. Mooring lines are used to steady aircraft and prevent swaying; otherwise, injury to personnel or damage to aircraft may occur.
- Supervisor shall verify that each technician is familiar with safety conditions listed below and is briefed on positions and responsibilities; other wise, injury to personnel or damage to aircraft may occur.
- Aircraft shall not be lifted until fire department has cleaned up or neutralized any spilled flammable fluids; otherwise, injury to personnel or damage to aircraft may occur.
- All equipment not utilized shall be removed from area; otherwise, injury to personnel or damage to aircraft may occur.
- All aircraft electrical systems shall be deenergized before attempting to lift aircraft; otherwise, injury to personnel or damage to aircraft may occur.
- Set up shoring provisions to face aircraft into prevailing winds if aircraft is to be shored outside; otherwise, injury to personnel or damage to aircraft may occur.
- Hydrazine fuel (H-70) may be present on or around damaged aircraft. Personnel shall be familiar with and observe all safety precautions pertaining to handling hydrazine fuel as described in TO 1F-16( )-2-49GS-00-1. Failure to comply may result in injury to or death of personnel from contact with hydrazine.
- If any egress components are not in the normal or required position, egress or qualified personnel shall be notified to safe egress system before any further action is taken; otherwise, injury to personnel or damage to aircraft may occur.
- Safe or download all stores as soon as aircraft is clear and stable to prevent injury to personnel.

CAUTION

- Armament stores configurations will vary. Refer to TO 1F-16( )-16-1-2 or TO 1F-16( )-33-1-2 for stores configurations and weapons safety precautions. Failure to comply may result in damage to aircraft and equipment.
- All ground safety pins shall be installed from outboard side of pylons to prevent damage to aircraft.
- Deflection stresses can cause damage to aircraft if lifting is not done with care.
- Prior to lifting aircraft, the weight and balance records shall be checked and the gross weight and CG hoisting limits obtained from TO 1F-16( )-5-2. Failure to observe this caution may cause damage to aircraft and equipment.

NOTE

Fire truck shall remain on standby in area during entire lifting activity.

Support equipment required for hoisting is listed in Table 7-2. In performing hoisting operations in accordance with TO 1F-16( )-2-00GV-00-1, personnel shall observe applicable safety precautions as outlined above.

Table 7-2. Hoisting Support Equipment.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
16A11480-1 (81755)	Sling Assembly, Aircraft Hoisting	None	Attach to aircraft
16A11480-41 (81755)	Fitting (one required)	None	Attach to FS 268.58
16A11480-42 (81755)	Fitting (one required)	None	Attach at FS 268.58
16A11480-43 (81755)	Fitting (two required)	None	Attach at FS 374.40
	Moto-Crane, 35H	Equivalent	Hoist aircraft

CHAPTER 8

LEVELING AND WEIGHING

8.1 LEVELING THE AIRCRAFT.

The aircraft level condition may be checked by the use of a level bar, clinometer, and plumb bob or 24-inch bubble level and plumb bob. For complete, detailed aircraft leveling information, refer to TO 1F-16( )-5-2, LOADING DATA.

8.1.1 Jig Point Location. Jig point location is determined by suspending a plumb bob from an eyebolt inserted into the aft jack fitting on both sides of the aircraft at approximately FS 374.30, as shown in Figure 8-1.

8.1.2 Longitudinal (Pitch) Level. Longitudinal (pitch) level condition is checked by placing a clinometer on the left main landing gear wheel well structural beam at approximately FS 290.6, as shown in Figure 8-1.

8.1.2.1 To longitudinally level the aircraft, extend the main gear struts evenly until the clinometer in the main landing gear wheel well indicates a level condition. Record jig point location. Extend nose gear strut as necessary to maintain a minimum of 1.0-inch exposed chrome to avoid seal damage.

8.1.3 Lateral (Roll) Level. Lateral (roll) level condition is checked by placing a level bar and clinometer or a 24-inch level across the canopy sill rails at approximately FS 140.0, as shown in Figure 8-1.

8.1.3.1 To laterally level the aircraft, extend the right or left main gear strut until clinometer located on level bar across the canopy sill rails indicates a level condition. Record jig point 2.45 location.

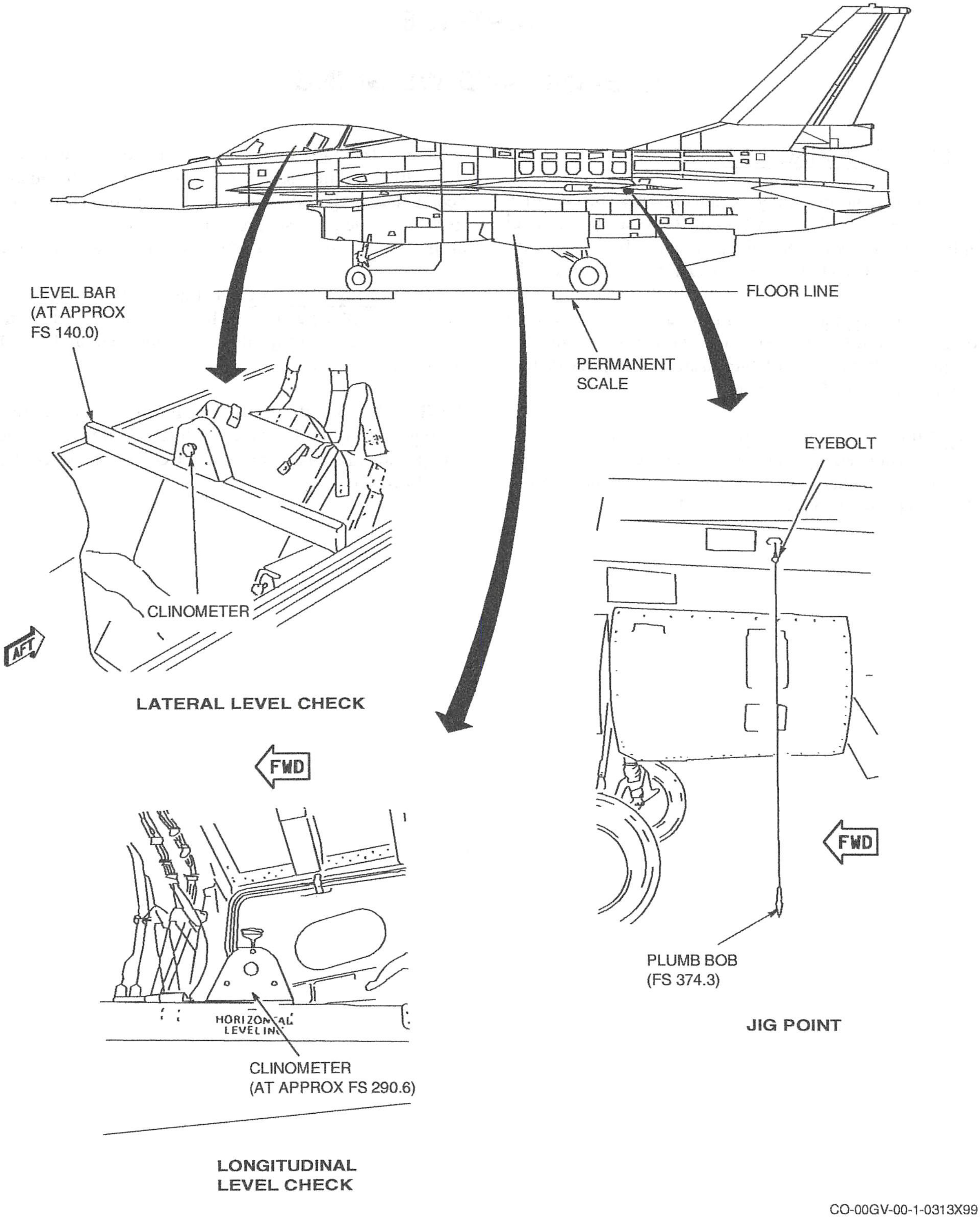

Figure 8-1. Aircraft Leveling.

8.2 WEIGHING THE AIRCRAFT.

Determining the weight of the aircraft is accomplished by using three weighing platforms simultaneously. The platforms are placed on a level surface in a closed building free from wind influence.

8.2.1 Scales. Mobile Electronic Weighing System (MEWS) Figure 8-2, permanent platforms (Figure 8-3), or load cell (Figure 8-4) type scales may be used to weigh the aircraft.

8.2.2 Aircraft Inventory Configuration. Aircraft inventory configuration shall be in accordance with TO 1-1B-50.

8.2.3 Weighing. Weighing is performed by backing the aircraft onto weighing platforms and leveling it laterally and longitudinally before taking weight readings.

8.2.4 Detailed Aircraft Weighing Information. For complete, detailed aircraft weighing information, refer to TO 1F-16( )-5-2, LOADING DATA.

8.2.4.1 For complete, detailed basic weight checklist information, refer to TO 1F-16( )-5-1, BASIC WEIGHT CHECK LIST.

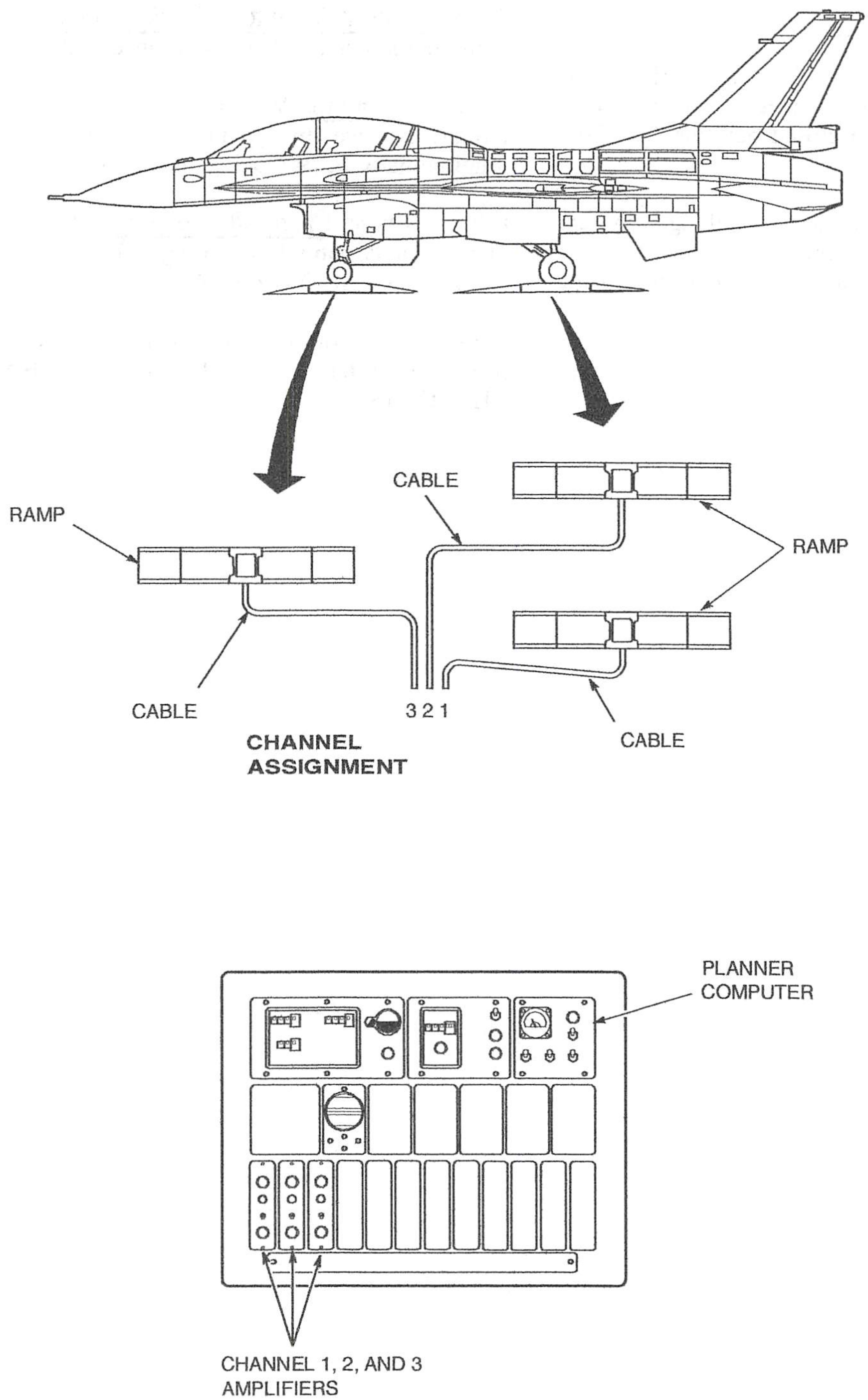

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Figure 8-2. Portable (MEWS) Scales.

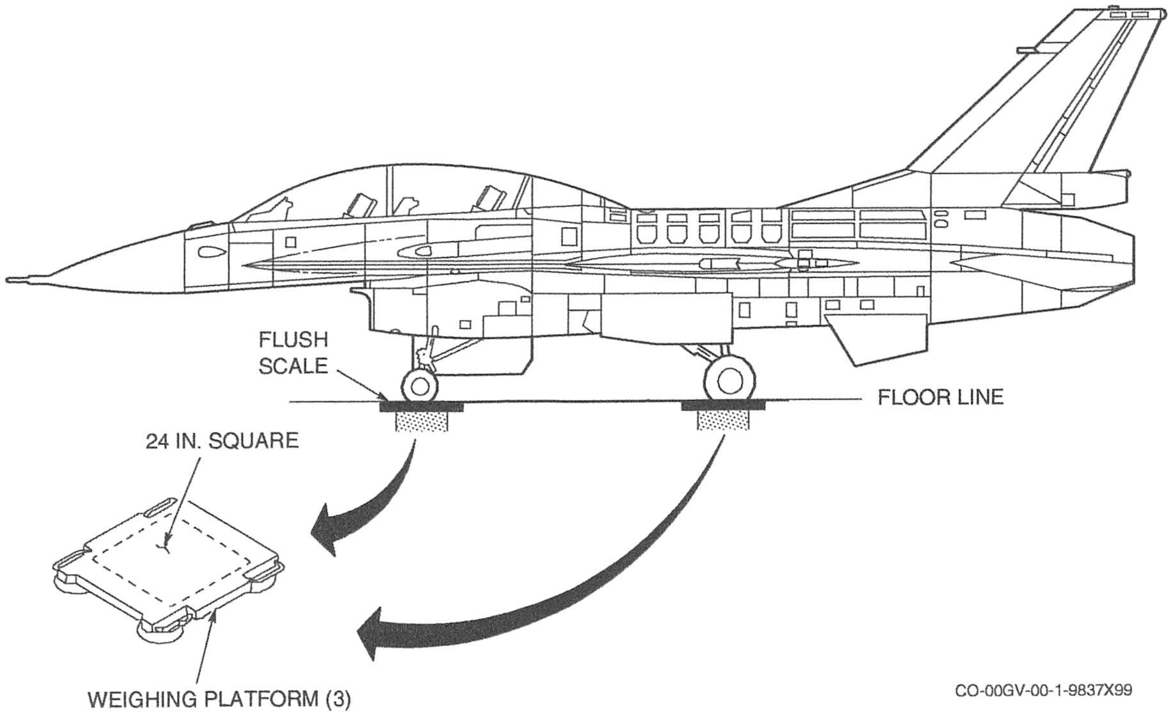


Figure 8-3. Permanent Platform Scales.

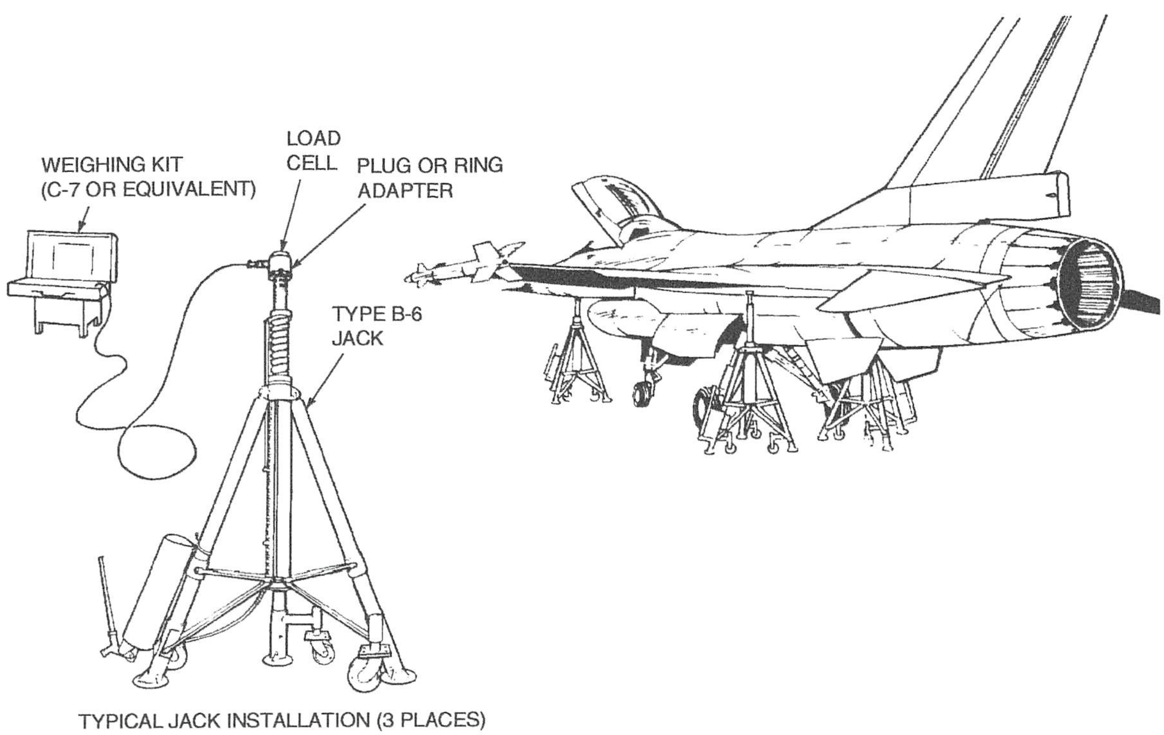


Figure 8-4. Load Cells and Jacks Method of Weighing.

CHAPTER 9

TOWING AND TAXIING

9.1 GENERAL.

This section presents a summary of procedures for towing and taxiing. The instructions for towing and taxiing are contained in JG09-00-01.

9.2 TOWING.

The aircraft may be towed in all configurations and weights.

9.2.1 Towing Support Equipment Required. The support equipment required for towing is in Table 9-1.

Table 9-1. Towing Support Equipment.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
Type MB-4	Towing Tractor	Equivalent	Prime mover
16A13010-1 (81755)	Nose Gear Steering Bar	Equivalent	Steer aircraft
55J22139-2 (23569)	Nose Gear Tow Bar	Equivalent	Tow aircraft
42D6594-2 (80049)	Wheel Chocks (four each)	Equivalent	Chock aircraft
16A11001 (81755)	Cockpit Entry Ladder	Equivalent	Enter aircraft
4469 (83007)	Main Gear Towline	None	Tow aircraft
* 16A45040L1-1	Pump Handle	Equivalent	Charge JFS accumulators
*16A13169L1-1	MLG Towing Aid Spacer	None	To allow towing of aircraft with brake assembly removed
PDG2172 (18631)	Disabled Wheel Dolly	None	Move aircraft
CJ67D0250-1 (00994)	Axle Jack	Equivalent	Lift wheel
84610 (80049)	Aircraft Ground Cable	None	Ground aircraft
COML	Flashlights and/or Luminescent Wands (as required)	Equivalent	Maintenance

* Locally Manufactured Item.

9.2.2 Towing Precautions.

WARNING

- Towing supervisor shall verify that personnel involved in towing aircraft are qualified and briefed on their positions, responsibilities, use of authorized signals, towing speeds, and routes. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Use extreme caution when opening canopy or leaving canopy open if winds exceed 30 knots. Failure to comply may result in serious injury to personnel and/or damage to aircraft.
- Normal aircraft brakes shall not be used during towing to prevent the depletion of the brake accumulators, thereby making the parking brake inoperative. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.
- Parking brake shall not be used during towing except for accomplishment of an emergency stop. Main power switch must first be set to BATT. Brakes will be applied abruptly when brake switch is set to PARKING BRAKE. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Abrupt starts, stops, and sharp turns shall be avoided under normal conditions since damage to tow bar, tractor, nose gear strut, or aircraft tires could occur and result in injury to personnel and/or damage to equipment.
- Tow tractor shall not exceed 3 miles per hour in congested areas or when using wingwalkers; otherwise, injury to personnel and/or damage to equipment may result.

CAUTION

- Doors 3303 3304 shall be installed or tacked prior to towing aircraft, as outlined in TO 1F-16A-2-09JG-00-1. Failure to comply may result in damage to aircraft.
- When towing aircraft with faulty brakes, have a minimum of two chocks available to chock main wheels if an emergency condition should occur. Failure to observe this caution may result in damage to equipment or aircraft.
- Nose landing gear and main landing gear shock struts and tires shall be properly serviced (visual check) as damage to aircraft may occur.
- Maximum towing speed shall be a safe reasonable speed in uncongested areas and when wingwalkers are not being used. Maximum towing speeds will vary according to weather conditions, type of surface, and terrain. Failure to observe this caution may result in damage to equipment or aircraft.
- Use emergency towing methods to tow aircraft in heavy snow, mud, or other irregular terrain where excessive NLG tow loads may be encountered. Failure to observe this caution may result in damage to aircraft.
- Aircraft shall be chocked before disconnecting nose gear tow bar from aircraft or tractor. Failure to observe this caution may result in damage to equipment.
- Prior to completion of aircraft towing, check tires for imbedded objects and damage. Failure to comply may result in damage to aircraft.
- All personnel shall look for clearances or obstructions during movement of aircraft. Failure to observe this caution may result in damage to equipment.
- Do not tow aircraft with less than 1000 pounds of weight on the nose landing gear. At this minimum weight, refrain from any sudden starts or stops or damage to aircraft may occur.

NOTE

- Ballast may be added to maintain proper nose loading during towing. There is no set procedure to add necessary ballast. Refer to TO 1F-16( )-5-2 to calculate towing limits.
- Torque arms must be aligned before disconnecting tow bar to permit connecting the quick-release pin.
- After tow bar has been disconnected, verify nosewheel bushing was not moved or damaged.
- Repositioning the F-16 aircraft is permissible with any one wing attach fitting removed. Only one attach fitting per wing maybe removed prior to repositioning of aircraft. The location of the removed fitting is optional. All stores and suspension equipment including wing fuel tank shall be removed from the wing prior to removing the fitting.

The aircraft must be safe for maintenance in accordance with JG10-30-01.

9.2.3 Towing Preparations.

CAUTION

Doors 3303 and 3304 shall be installed or tacked prior to towing aircraft, see tacking procedures as outlined in TO 1F-16( )-2-09JG-00-1. Failure to comply may result in damage to aircraft.

NOTE

Panels 4301 and/or 4302 only require temporary installation, see tacking procedures as outlined in TO 1F-16( )-2-09JG-00-1.

a. Structural access panels 3119, 3121, 3123, 3220, 3222, and 3224 and B 2418 and A 19 access panel 2404 A 20 access door 2404 must be installed/ closed.

b. Flashlights and/or luminescent wands shall be used by nose, wing and tail walkers for signaling at night.

c. Insure towing personnel are qualified and briefed on their positions, responsibilities, use of authorized signals, towing speeds, and routes.

d. Verify towing route has adequate clearance and is free of foreign objects and all service pits and ground openings are closed.

e. Insure all test equipment, service carts, etc., are disconnected and cleared from aircraft.

f. Insure both JFS and BRAKE accumulator gages have minimum braking pressure (3000 (±100) psi).

g. Check left and right side aircraft wheels, tires, brakes, and hydraulic lines for obvious damage, tire deflation, tire delamination, fluid leakage, interference, or any other condition that may cause damage during towing.

9.2.3.1 Nose Gear Towing. Nose gear towing is the normal towing method and is accomplished by attaching a tow bar to a tow fitting on the nose gear axle. The tow fitting is capable of withstanding the push/pull force required to move a maximum gross weight aircraft over normal towing surfaces. A summary of nose gear towing steps is as follows:

a. Remove quick-release pin from nose gear torque arms to disconnect nosewheel steering and insert quick-release pin in nose gear wheel axle from right side. (Refer to Figure 9-1, view A.)

b. Attach nose gear tow bar to nosewheel axle and to towing tractor. (Refer to Figure 9-1, view B.)

NOTE

Fully retract nose gear tow bar travel wheels to clear terrain.

c. Remove wheel chocks, insure aircraft PARKING BRAKE is released, and disconnect and remove aircraft ground cable.

d. Tow aircraft to new location.

e. Place wheel chocks both forward and aft of both main gear wheels and connect aircraft ground cable from aircraft to earth ground.

f. Disconnect nose gear tow bar and move clear from aircraft.

g. Remove quick-release pin from nose gear wheel axle and install in nose gear torque arms.

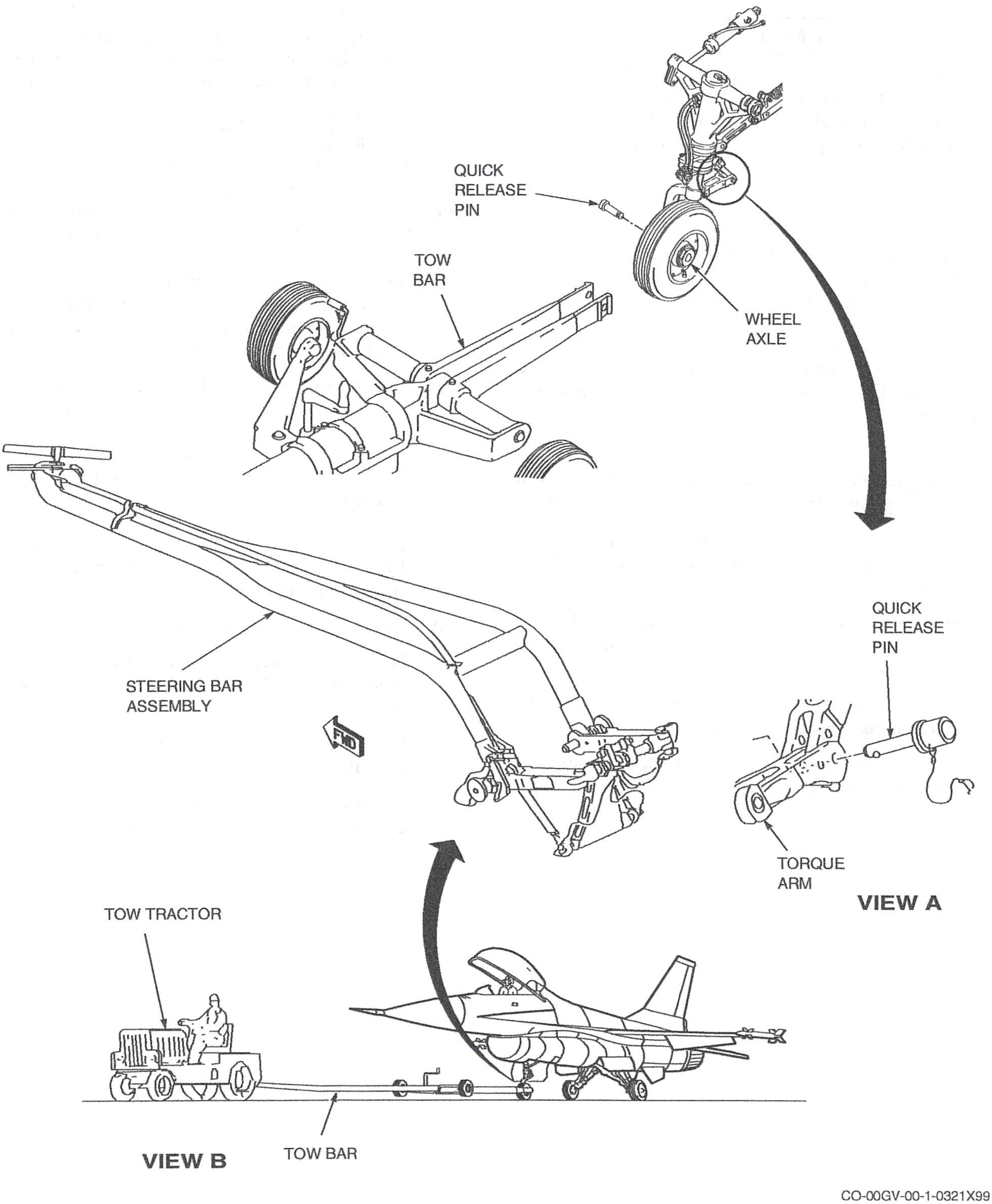


Figure 9-1. Nose Gear Towing.

9.2.3.2 Repositioning Aircraft with Steering Bar. It may be necessary to reposition the aircraft manually using the steering bar. (Refer to Figure 9-1, view A.)

WARNING

- Repositioning supervisor shall verify that personnel involved in repositioning aircraft are qualified and briefed on their positions, responsibilities, use of authorized signals, and critical phases of movement. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Parking brake shall not be used during manual repositioning except for accomplishment of an emergency stop. Main power switch must first be set to BATT. Brakes will be applied abruptly when brake switch is set to PARKING BRAKE. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- No attempt should be made to manually reposition aircraft on sloping terrain. Even shallow grades (less than 3 percent) can result in aircraft accelerating to unsafe speeds. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Normal aircraft brakes shall not be used during manual repositioning to prevent the depletion of the brake accumulators, thereby making the parking brake inoperative. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.
- Engine removal combined with some fuel loads and/or configurations may shift the CG out of forward limits. When such a condition exists, towing is prohibited. Refer to TO 1F-16( )-5-2, Center-of-Gravity Limits - Taxi, Take-off, Landing, and Ground Handling.

a. Remove safety pin, lockpin, and torque arm pin from nose gear torque arms to disconnect nosewheel steering and insert torque arm pin in nose gear wheel axle from right side. (Refer to Figure 9-1.)

WARNING

- Repositioning supervisor shall verify that personnel involved in repositioning aircraft are qualified and briefed on their positions, responsibilities, use of authorized signals, and critical phases of movement. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Parking brake shall not be used during manual repositioning except for accomplishment of an emergency stop. Main power switch must first be set to BATT. Brakes will be applied abruptly when brake switch is set to PARKING BRAKE. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- No attempt should be made to manually reposition aircraft on sloping terrain. Even shallow grades (less than 3 percent) can result in aircraft accelerating to unsafe speeds. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- Normal aircraft brakes shall not be used during manual repositioning to prevent the depletion of the brake accumulators, thereby making the parking brake inoperative. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

CAUTION

- Flight control surfaces shall not be used as push areas for manually repositioning aircraft. Failure to observe this caution may result in damage to equipment.
- When repositioning aircraft, all personnel shall watch for clearances or obstructions and have a minimum of two chocks available to chock main wheels if an emergency should occur and parking brakes cannot be applied. Failure to comply with this caution may result in damage to equipment.

NOTE

Technicians shall take positions as briefed.

b. Remove ladder.

c. Disconnect ground cable in accordance with TO 00-25-172.

CAUTION

Do not remove wheel chocks until all personnel are ready to reposition aircraft. Failure to observe this caution may result in damage to equipment.

d. Remove chocks.

CAUTION

Extreme inboard pressure on the main landing gear door while pushing the aircraft could cause the doors to fold against the shock strut, resulting in damage to equipment.

NOTE

Engine inlet lip, pylons, and MLG struts/doors are acceptable push areas.

e. Guide aircraft with steering bar and position as required.

CAUTION

- When positioning aircraft in a designated area, slowly tow aircraft to near stop. Failure to observe this caution may result in damage to equipment.
- Aircraft shall be chocked before technician leaves cockpit. Failure to observe this caution may result in damage to equipment.

f. Disconnect nose gear steering bar and move equipment clear of aircraft.

NOTE

After nose gear steering bar has been disconnected, verify nosewheel bushing was not moved or damaged.

g. Remove quick-release pin from nose gear steering bar brake idler assembly and install in nose gear torque arms.

9.2.4 Main Gear Towing and Winching. It may be necessary in an emergency situation to move the aircraft by means of a towline attached to the main gear. The towline can be extended either forward or aft, and moving power can be supplied by either a towing tractor or winch. Eight personnel are recommended. A summary of main gear towing and winching steps is as follows:

a. Remove quick-release pin from nose gear torque arms to disconnect nosewheel steering and insert quick-release pin in nose gear wheel axle from right side. (Refer to Figure 9-1, view A.)

b. Attach nose gear tow bar to nosewheel axle for steering.

c. Connect main gear towline to main gear struts and connect towing tractor or winch to main gear towline.

CAUTION

- Do not remove wheel chocks until all repositioning personnel are ready to reposition aircraft. Failure to observe this caution may result in damage to equipment.
- When manually winching an aircraft on a sloping floor, use a steering bar with handbrake. When a steering bar is not available, use a tractor with a tow bar. Failure to observe this caution may result in damage to equipment.

d. Remove wheel chocks, insure aircraft PARKING BRAKE is released, and disconnect and remove aircraft ground cable.

e. Tow or winch aircraft to new location.

f. Place wheel chocks both forward and aft of both main gear wheels and connect aircraft ground cable from aircraft to earth ground.

g. Using nose gear tow bar or steering bar, align nose gear wheel with aircraft center- line.

h. Disconnect nose gear tow bar and main gear towline and move clear from aircraft.

NOTE

After nose gear tow bar or steering bar has been disconnected, verify nosewheel bushing was not moved or damaged.

i. Remove quick-release pin from nose gear wheel axle and install in nose gear torque arms.

9.2.4.1 Disabled Wheel Towing. It may be necessary in an emergency situation to move the aircraft with any or all wheels disabled due to flat tires, locked brakes, broken wheels, etc. In such a situation the disabled wheel is lifted clear of the ground, using a disabled wheel dolly, and the aircraft is moved on the dolly. Six personnel are recommended for disabled main gear wheel or five for nose gear. A summary of disabled wheel towing steps is as follows:

WARNING

Maximum aircraft towing speed is 3 miles per hour when using disabled wheel dolly. Failure to observe this warning may result in injury to personnel and/or damage to equipment.

a. Manually position the disabled wheel dolly outboard of the disabled main gear wheel or on the left side of the disabled nose gear wheel.

b. Pivot the dolly casters 90 degrees and manually position the dolly until crowding frame and lift plate are in alignment with the disabled wheel. (Refer to Figure 9-2.)

NOTE

In the case of a flat tire, it may be necessary to jack the disabled wheel to allow the dolly to be positioned.

c. Operate the disabled wheel dolly to lift the disabled wheel clear of the ground.

d. If disabled wheel is on the main gear, move aircraft as follows:

CAUTION

Forward casters on dolly should remain unlocked to allow for 360-degree swivel during towing of aircraft. Failure to comply may result in damage to equipment.

NOTE

- When supporting one main gear only - no locking is necessary.
- When supporting both main gears - lock trailing casters on both dollies.
- When supporting all gears - lock trailing casters on all dollies.

(1) Pivot disabled wheel dolly casters to line of travel and lock trailing casters as required.

(2) Move the aircraft using nose gear towing method. (Refer to Figure 9-3, view A.)

e. If disabled wheel is on the nose gear, move aircraft as follows:

CAUTION

Forward casters on dolly should remain unlocked to allow for 360-degree swivel during towing of aircraft. Failure to comply may result in damage to equipment.

NOTE

- When supporting all gears - lock trailing casters on all dollies.
- When supporting nose gear only - lock trailing casters.

(1) Position disabled wheel dolly trailing wheels parallel to dolly centerline and lock casters in place.

(2) Unlock disabled wheel dolly forward wheel casters to allow free 360-degree movement.

(3) Move the aircraft using nose gear towing method but connect towing tractor to the disabled wheel dolly using the tow bar provided with the dolly. (Refer to Figure 9-3, view B.)

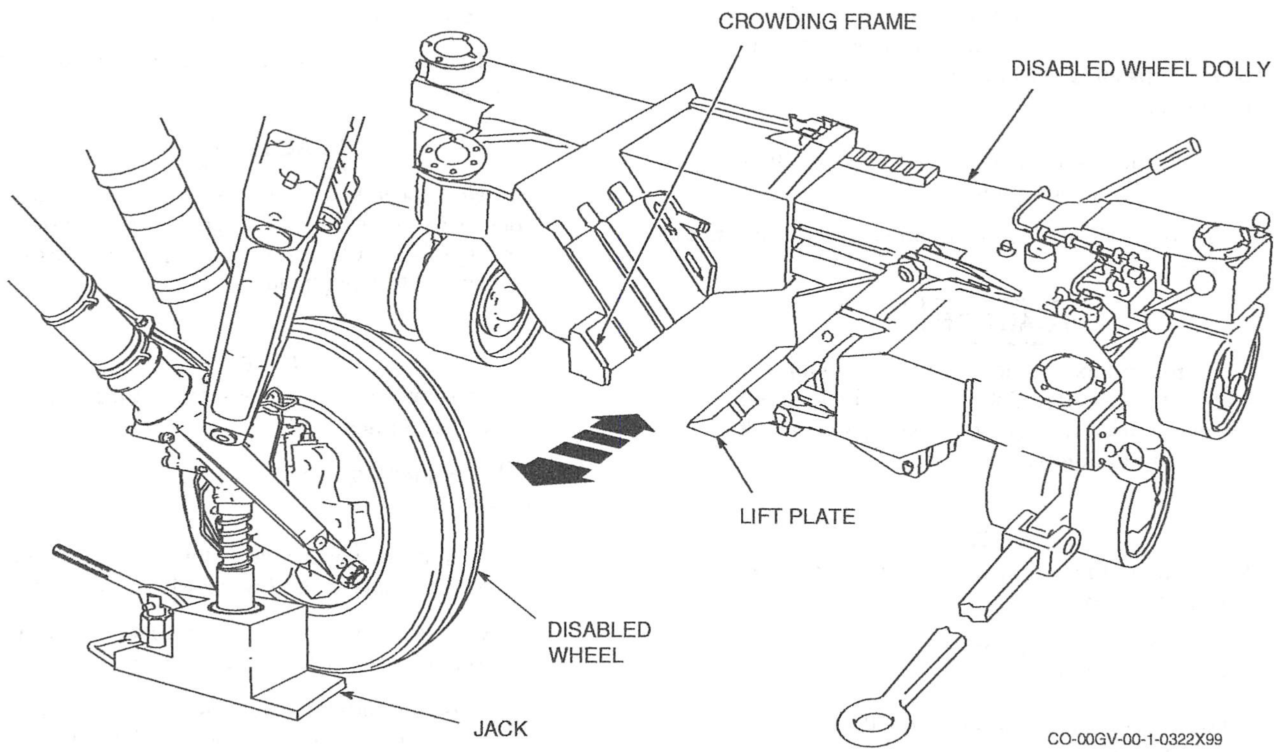
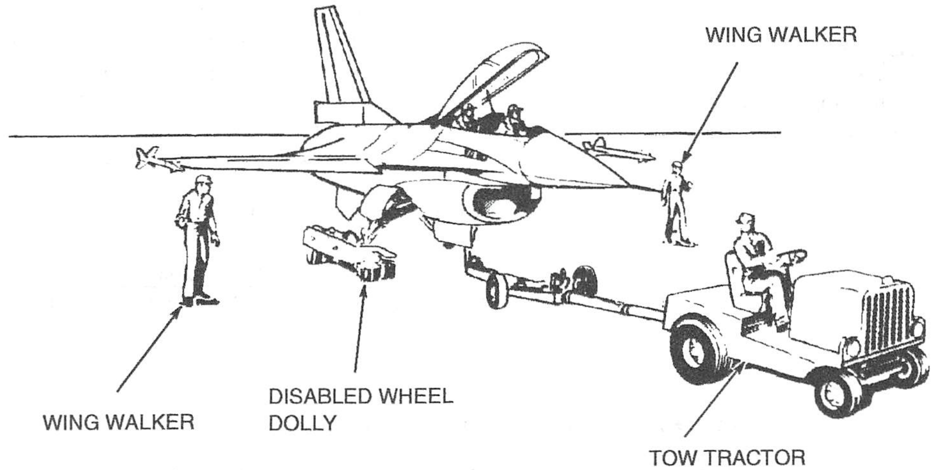
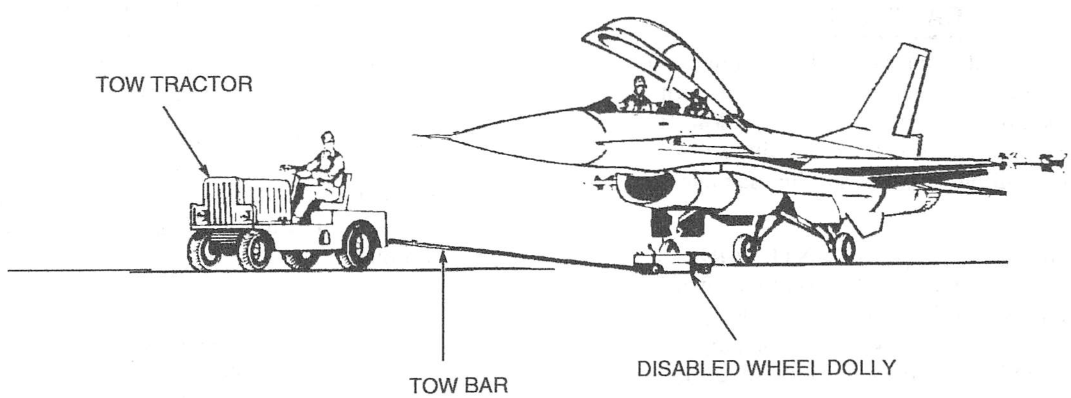


Figure 9-2. Positioning Disabled Wheel Dolly.



A

MAIN LANDING GEAR WHEEL DISABLED



B

NOSE LANDING GEAR WHEEL DISABLED

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Figure 9-3. Towing Disabled Wheel Aircraft.

9.3 TAXIING.

WARNING

- Do not taxi aircraft with inoperative or faulty brakes; injury to personnel and damage to aircraft may result.
- When necessary to taxi aircraft with asymmetric stores loading, taxi speed shall be maintained as low as possible and turns shall be made toward the heavy wing to avoid possibility of tip over, resulting in injury to personnel and/or damage to aircraft.

Two persons are recommended.

9.3.1 Taxiing Support Equipment Required. The support equipment required for taxiing is in Table 9-2.

Table 9-2. Taxiing Support Equipment.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
16A11001 (81755)	Cockpit Entry Ladder	Equivalent	Enter aircraft
42D6594-2 (80049)	Wheel Chocks (four each)	Equivalent	Chock aircraft
H-133C/AIC (71483)	Interphone Headset	Equivalent	Communications
5-62887-1 (81755)	Interphone Headset Cord	Equivalent	Communications

9.3.2 Taxiing Precautions.

CAUTION

- Taxiing of aircraft shall be held to a minimum and shall be accomplished at low speeds, with engine operating speeds at idle or below, to prevent excessive use of brakes. Failure to observe this caution could result in damage to aircraft.
- Brake switch shall remain in ANTI SKID during all taxiing operations. Positioning switch in PARKING BRAKE with 24-volt dc power available will result in very abrupt stop and possible skidding of tires. Failure to observe this caution could result in damage to aircraft.
- Initial movement when taxiing should be in a straight line; then turns up to 32 degrees can be made with nose gear steering. See Figure 9-4 for turning radius and ground clearance. Failure to observe this caution could result in damage to aircraft.
- Special care must be taken when taxiing over unlevel grades to prevent excessive speeds when the unfavorable condition improves. Failure to observe this caution could result in damage to aircraft.
- Aircraft shall not be taxied with open access doors, missing structural panels, open canopy, or with protective covers installed on air data probes. Failure to observe this caution could result in damage to aircraft.
- Aircraft shall not be taxied unless landing gear tires and struts are serviced in accordance with instructions on landing gear struts. Failure to observe this caution could result in damage to aircraft.

NOTE

With engine operating at IDLE speed and all engine-powered systems within tolerance, perform procedures to taxi aircraft.

Observe all precautions during taxiing.

9.3.3 Taxiing Preparations. Start engine in accordance with JG70-00-01.

9.3.4 Taxiing Procedure. Taxiing procedures are outlined as follows:

a. Set aircraft controls as follows:

Landing Gear Panel

BRAKES switch	CHAN 1
Brake switch	PARKING BRAKE

Landing Gear Panel

EXT LIGHTING Panel

MASTER switch	NORM
WING TAIL switch	BRT
Anticollision switch	ANTI COLLISION

Side Stick Controller

NWS A/R DISC MSL STEP switch	Depressed

b. Remove wheel chocks and disconnect and remove aircraft ground cable.

c. Depress brake pedals evenly.

d. Set aircraft brake switch on landing gear panel to ANTI SKID.

e. Release aircraft pedal brake pressure and taxi to new location using nosewheel steering. Stop aircraft with pedal brakes.

f. Set aircraft brake switch to PARKING BRAKE.

g. Install wheel chocks both forward and aft of both main gear wheels.

h. Shut down engine in accordance with JG70-00-01.

i. Set aircraft controls as follows:

EXT LIGHTING Panel

MASTER switch	OFF

j. Connect aircraft ground cable from aircraft to earth ground.

k. Complete aircraft forms.

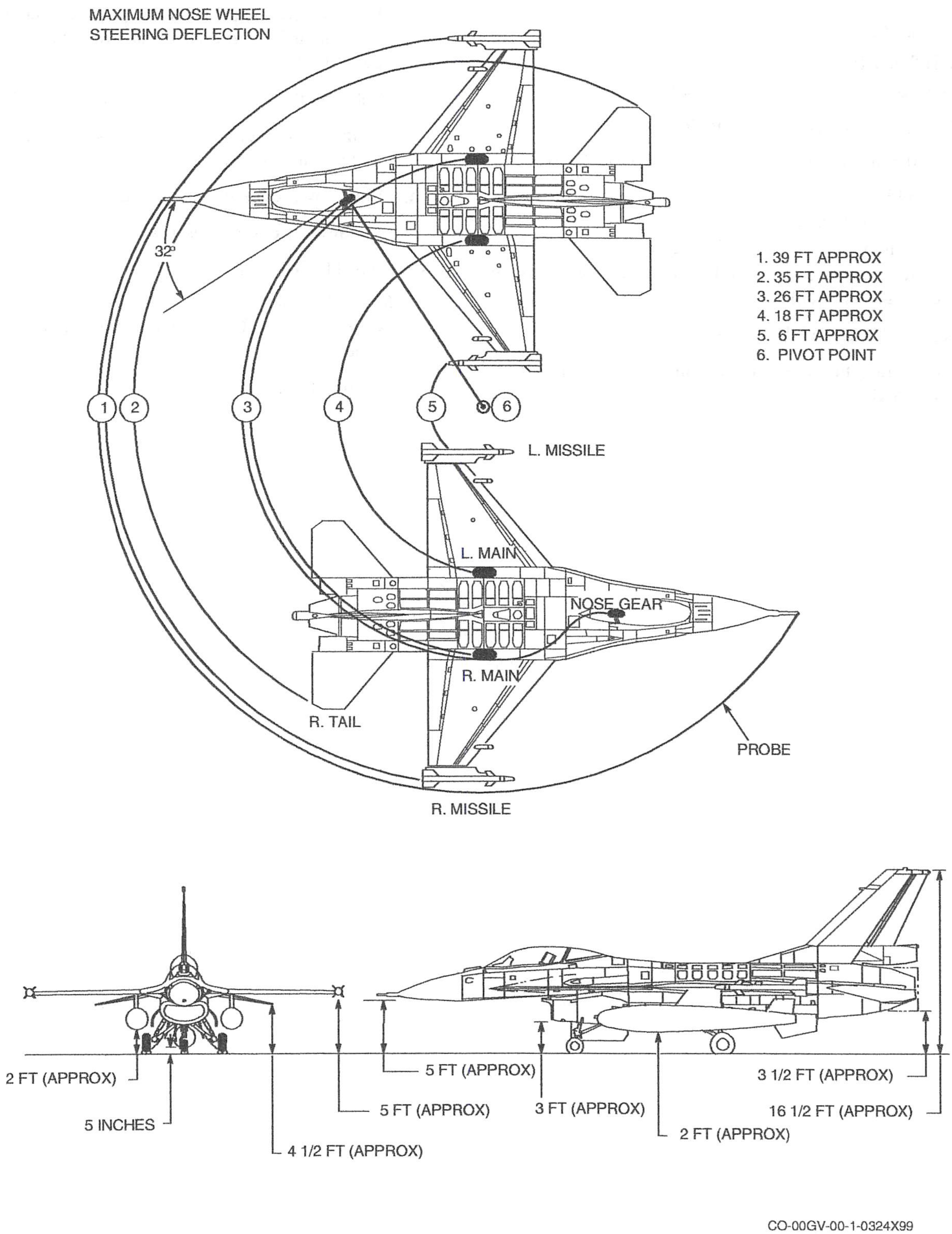

Figure 9-4. Turning Radius and Ground Clearance.

CHAPTER 10

PARKING AND MOORING

10.1 GENERAL.

The aircraft requires procedures for parking and aircraft safety under all conditions of maintenance, weather, storage, aircraft configuration, and/or operating ground surfaces. The detail procedures for aircraft safety are in TO 1F-16( )-2-10JG-00-1.

10.2 PARKING.

Proper parking, for varying periods of time, is essential to safeguard the aircraft. In congested areas, proper disbursement and parking pattern is necessary to have sufficient maneuvering space to tow or taxi the aircraft. Distance between aircraft may vary according to base policy. Parking includes securing aircraft; installing ground safety lock devices, static grounding cable, protective devices, and wheel chocks; and closing canopy. In high winds, park aircraft headed into the wind. The radome should not be opened in high winds. When extremely severe weather conditions are predicted, the aircraft shall be moved into a hangar or flown to a base outside the severe weather area as established by base policy. Chocks shall be laced or tied together whenever aircraft is left unattended. Aircraft with armament aboard should be parked in designated explosive parking areas. Keep the canopy closed during wet weather. Aircraft with access panels removed for an extended period should be protected from the environment, especially during inclement weather. Requirements to be accomplished after completion of each flight and before parking of aircraft are provided in TO 1F-16( )-6WC-1 workcards. Details of aircraft storage are covered in TO 1-1-17. Parking operations are in four sequential time frames:

a. Parking aircraft 10 days or less.

b. Parking aircraft more than 10 but less than 31 days.

c. Parking aircraft more than 30 but less than 91 days.

d. Parking aircraft more than 90 days.

10.2.1 Parking Support Equipment Required. The support equipment required for parking is in Table 10-1.

Table 10-1. Parking Support Equipment.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
	Aircraft Ground Cable	Equivalent	Ground aircraft
16A14001-1 (81755)	Angle-of-Attack Transmitter Cover	Equivalent	Cover transmitter
16A13037-5 (81755)	Arresting Hook Ground Lockpin	Equivalent	Safe arresting hook
MIL-B-131, Class 2	Barrier Material	Equivalent	Cover openings
16A11001-3 (81755)	Cockpit Entry Ladder	Equivalent	Enter aircraft
EDGPAK10R (04930)	Edgpak	Equivalent	Cover leading/trailing edges
16A75061-3 (81755)	Emergency Power Unit Safety Pin	None	Safe emergency power unit
68D05006-1001 (81755)	Engine Exhaust Cover	Equivalent	Cover engine exhaust
16A23015-3 (81755)	Engine Inlet Cover Escape System Ground	Equivalent	Cover engine inlet
C119078-1 (A/R)(81755)	Escape System Ground Maintenance Pin	None	Safe escape system
16A12005-3 (81755)	Escape System Safety Pin	None	Safe escape system
16S463-1 (A/R) (81755)	Fuel Pylon Safety Pin	Equivalent	Safe fuel pylons
16A75061-3 (81755)	Gunfiring Circuit Safing Pin	None	Safe gunfiring circuit

Table 10-1. Parking Support Equipment - Continued.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
VV-L-800 (81755)	Preservation Oil	Equivalent	Restoring aircraft
COML	Lint-Free Cloth	Equivalent	Restoring aircraft
16A13006-809 (81755)	Main Landing Gear Ground Lockpin	None	Safe main landing gear
48E16919 (81755)	Maintenance Platform, Type C-1	Equivalent	Perform maintenance
16A14010-7 (81755)	Pitot Static Probe Cover	Equivalent	Cover pitot-static probe
16A13006-807 (81755)	Nose Landing Gear Ground Lockpin	Equivalent	Safe nose landing gear
135947-0001 (19397)	Safety Pin (chaff/flare)	None	Safe (chaff/flares)
64C13362-3 (A/R)(81755)	Safety Pin(MAU-12C/A)	None	Safe (MAU12C/A)
16S242-1 (A/R) (81755)	Safety Switch Pin(AIM-9)	None	Safe (AIM9)
16A14010-15 (81755)	Air Data Probe Cover	Equivalent	Cover air data probe
MIL-T-22085	Tape	Equivalent	Secure material/covers
42D6594-2 (80049)	Wheel Chocks	Equivalent	Chock aircraft

10.2.2 Parking Aircraft 10 Days or Less.

WARNING

- Aircraft has low profile and is easily reached from ground for maintenance. Trailing edges of horizontal stabilizer and wing are very sharp; therefore, care shall be exercised to prevent injury to personnel.
- Always approach hot wheels from line-of-roll direction when installing chocks to eliminate possibility of injury to personnel.

To begin parking operations, the following conditions are required:

a. Aircraft positioned on parking site.

b. Nose radome closed and secured in accordance with JG53-00-34.

c. Leading edge and trailing edge flaps fully retracted in accordance with JG27-80-01.

d. All stores downloaded in accordance with TO 1F-16( )-33-1-2.

e. Aircraft safe for maintenance in accordance with JG10-30-01.

10.2.2.1 Perform the following operations; refer to Figure 10-1.

WARNING

Do not enter areas under arresting hook, external stores pylons, external fuel tanks, and chaff/flare dispenser until all applicable safety pins have been installed. Failure to comply may result in serious injury or death to personnel.

a. Install chocks forward and aft of each main landing gear wheel.

WARNING

Hazardous voltage may be on the aircraft before the ground wire is connected. To prevent a dangerous shock, the ground wire shall be connected to the ground rod before making connection to aircraft. Failure to comply may result in injury or death to personnel or damage to aircraft.

b. Connect aircraft ground cable from earth ground to aircraft.

c. Install main landing gear ground lockpins.

d. Install nose landing gear ground lockpin.

NOTE

If arresting hook is extended, perform 10.2.2.1 Step f; otherwise, proceed to 10.2.2.1 Step e.

e. Manually raise arresting hook and, using screwdriver or equivalent tool, press forward on uplock hook and lock arresting hook.

WARNING

Arresting gear ground safety lockpin shall be installed from left to right. Installation of lockpin from right side could result in inadvertent release of arresting hook. Failure to comply may result in serious injury or death to personnel.

f. Install arresting hook ground lockpin from the left side.

g. Install switch safety pins in missile launchers.

h. Install safety pins in MAU-12 bomb racks on wing pylons if Triple Ejector Racks (TER) are installed.

i. Install safety pin in MAU-12 bomb rack on centerline pylon if external fuel tank is installed.

j. Install gunfiring circuit safety pin in gunfiring circuit.

CAUTION

Gun safety pin may be installed from inside or outside of fuselage. If gunfire safety pin is installed from outside of fuselage, insure that streamer ring is positioned outboard. Failure to comply may cause damage to aircraft.

k. Install safety pin in chaff/flare dispenser.

l. Install fuel pylon safety pins in fuel pylons (stations 4 and 6) if wing external fuel tanks are installed.

WARNING

- Battery voltage check is required if canopy moves very slowly while opening or battery fail light comes on. There is possibility that canopy actuator may back drive, causing canopy to lower, due to low battery voltage. Failure to observe this warning may result in injury to personnel and/or damage to equipment.
- If winds exceed 30 knots, open canopy only as far as needed to enter/exit cockpit. Winds above 30 knots are capable of blowing a full open canopy past full open position if certain conditions exist. Beyond full open position, canopy hinges may disengage and cause canopy assembly to fall. Decreasing canopy open angle reduces the possibility that canopy can be blown past full open. Failure to comply may result in injury to personnel and/or damage to aircraft.

CAUTION

Insure canopy sills and canopy are free of obstructions and foreign objects when operating canopy. Failure to comply may result in damage to aircraft and/or equipment.

NOTE

If canopy is closed, perform 10.2.2.1 Step m, 10.2.2.1 Step n, and 10.2.2.1 Step o; otherwise, proceed to step 10.2.2.1 Step p.

m. Open access door **A** 2105, **B** 2107.

n. Set and hold canopy external open/close switch to open until canopy is fully open; then release switch.

o. Close access door **A** 2105, **B** 2107 and secure with latch.

WARNING

When positioning crew entry ladder, avoid any contact with throttle. Allow strake support to rest against fuselage. Apply pressure to bottom step to insure ladder is properly engaged. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.

p. Position crew entrance ladder with hook over canopy sill and ladder support extended.

WARNING

- Do not enter cockpit until safety precautions identified in 10.2.2.1 Step q through 10.2.2.1 Step x have been accomplished. Failure to observe these precautions may result in injury to or death of personnel or damage to aircraft.
- Body positioning handles on canopy shall not be used to enter or exit cockpit. Failure to observe this warning may result in injury to personnel and/or damage to aircraft.
- Seat shall not be used as a step to enter or exit cockpit. Use of seat could cause loss of footing, resulting in activation of seat ejection sequence. Failure to observe this warning may result in serious injury or death to personnel.

q. Insure canopy jettison handle is fully seated.

r. Install escape system safety pin in canopy jettison handle.

s. Insure main power switch is set to OFF.

t. Insure throttle is in cutoff position.

u. Insure seat ejection control safety lever (left side) is in EJECTION CONTROL LOCKED.

v. Insure seat emergency manual chute handle (right side) is in down position.

w. Install escape system ground maintenance pins in fire control safety lever (left) and emergency manual chute handle (right).

x. Insure emergency oxygen manual pull ring has not been actuated.

y. Install pitot-static probe cover.

z. Install angle-of-attack transmitter covers (left and right).

aa. Install air data probe cover.

ab. Install engine inlet cover.

ac. Cover static pressure ports (left and right) with barrier material and secure with tape.

ad. Cover EPU exhaust duct opening with barrier material and secure with tape.

ae. Cover air duct scoop openings (left and right) with barrier material and secure with tape.

af. Apply tape around fire doors 3309 and 3322.

ag. Cover nacelle vent openings (left and right) with barrier material and secure with tape.

NOTE

Use maintenance platform as required to accomplish the following procedures.

ah. Install air data probe covers over static dischargers.

ai. Cut to fit and install edgpak on rudder, ventral fins (left and right), and fixed trailing edges.

aj. Cut to fit and install edgpak on flaperon trailing edges, vertical stabilizer leading edge, and horizontal stabilizer leading and trailing edges.

ak. Install engine exhaust cover.

al. Remove maintenance platform from area.

10.2.2.2 During this time frame, the parked aircraft does not require any maintenance inspection operations.

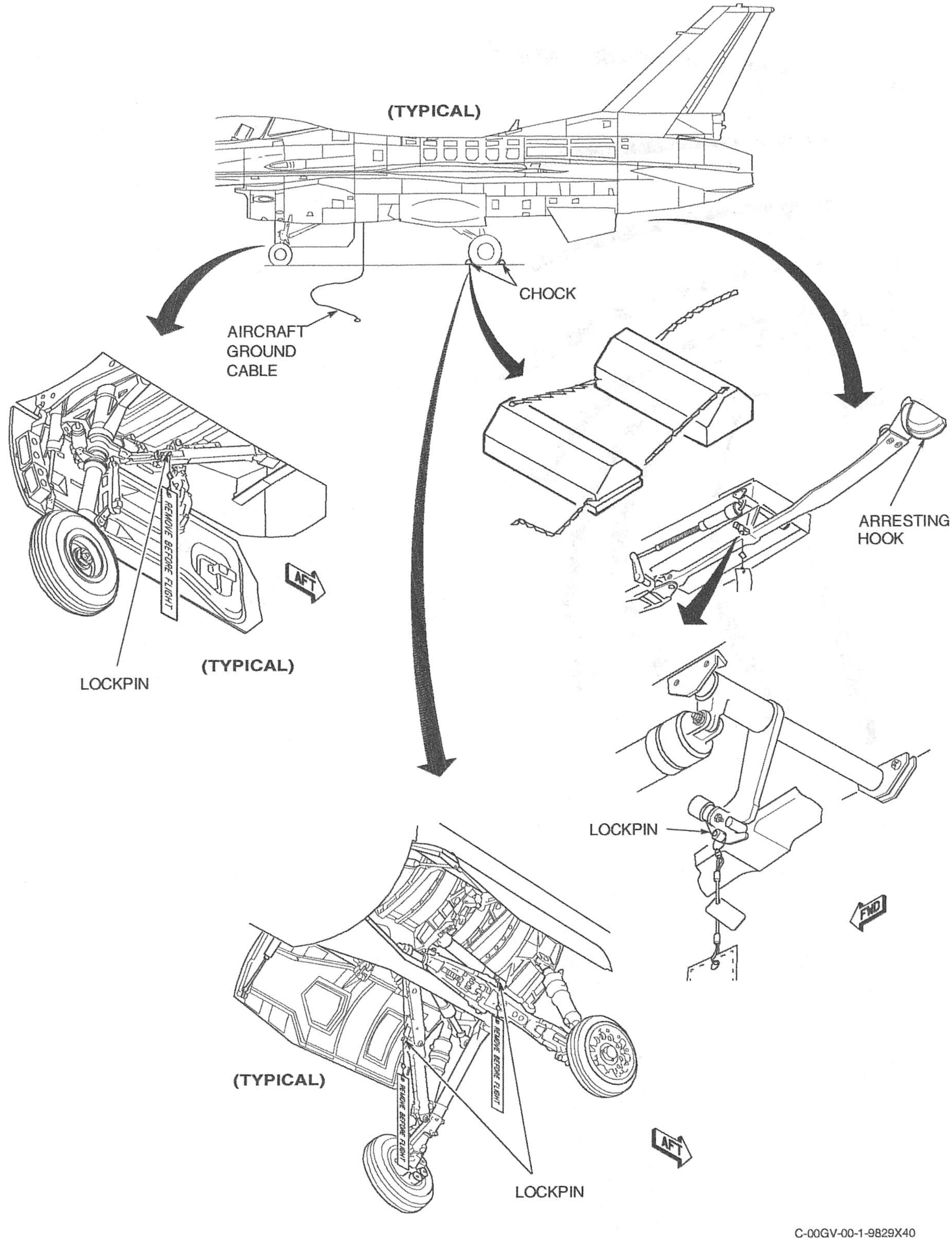

Figure 10-1. Parking 10 Days or Less. (Sheet 1 of 8)

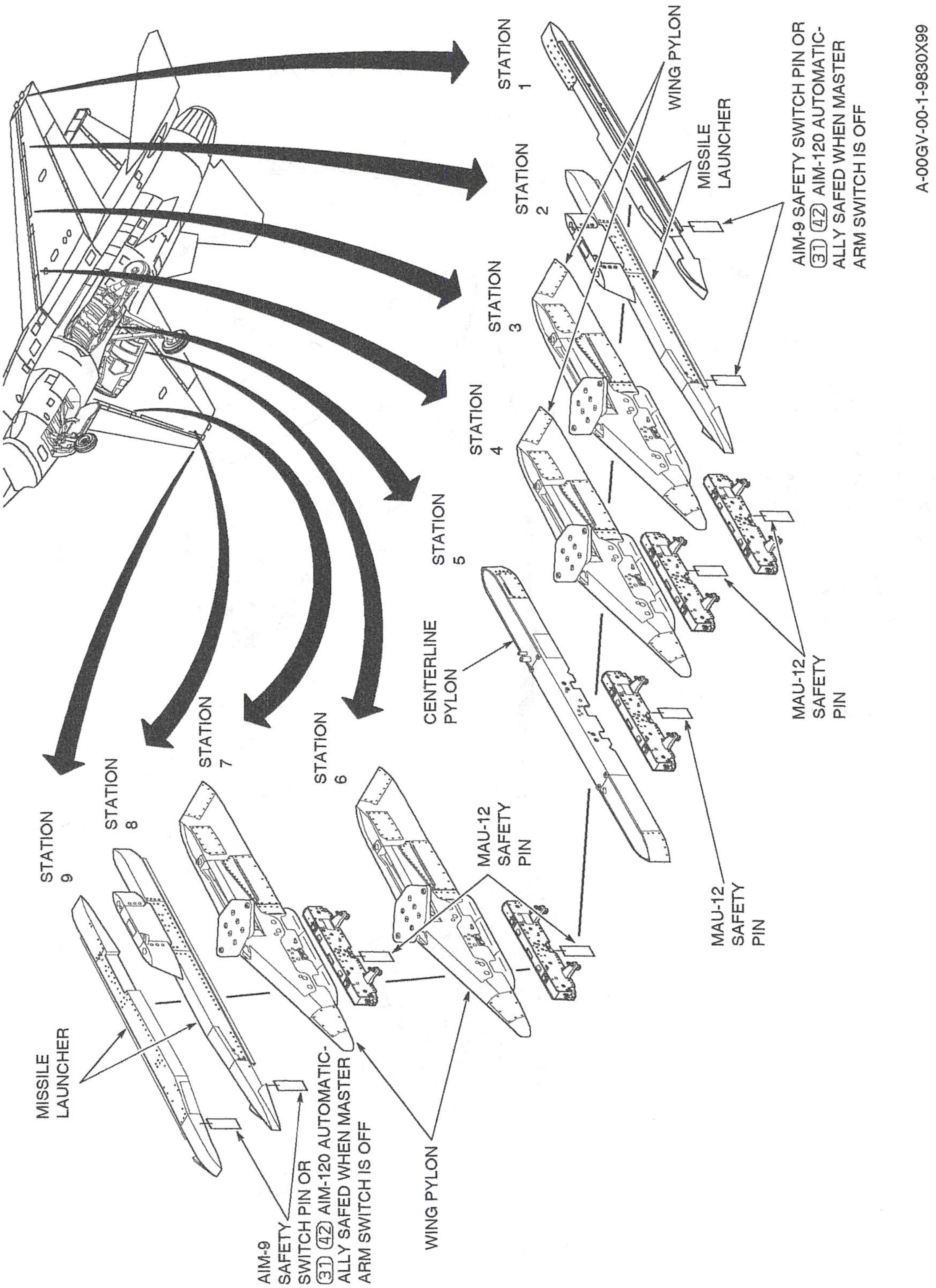

Figure 10-1. Parking 10 Days or Less. (Sheet 2)

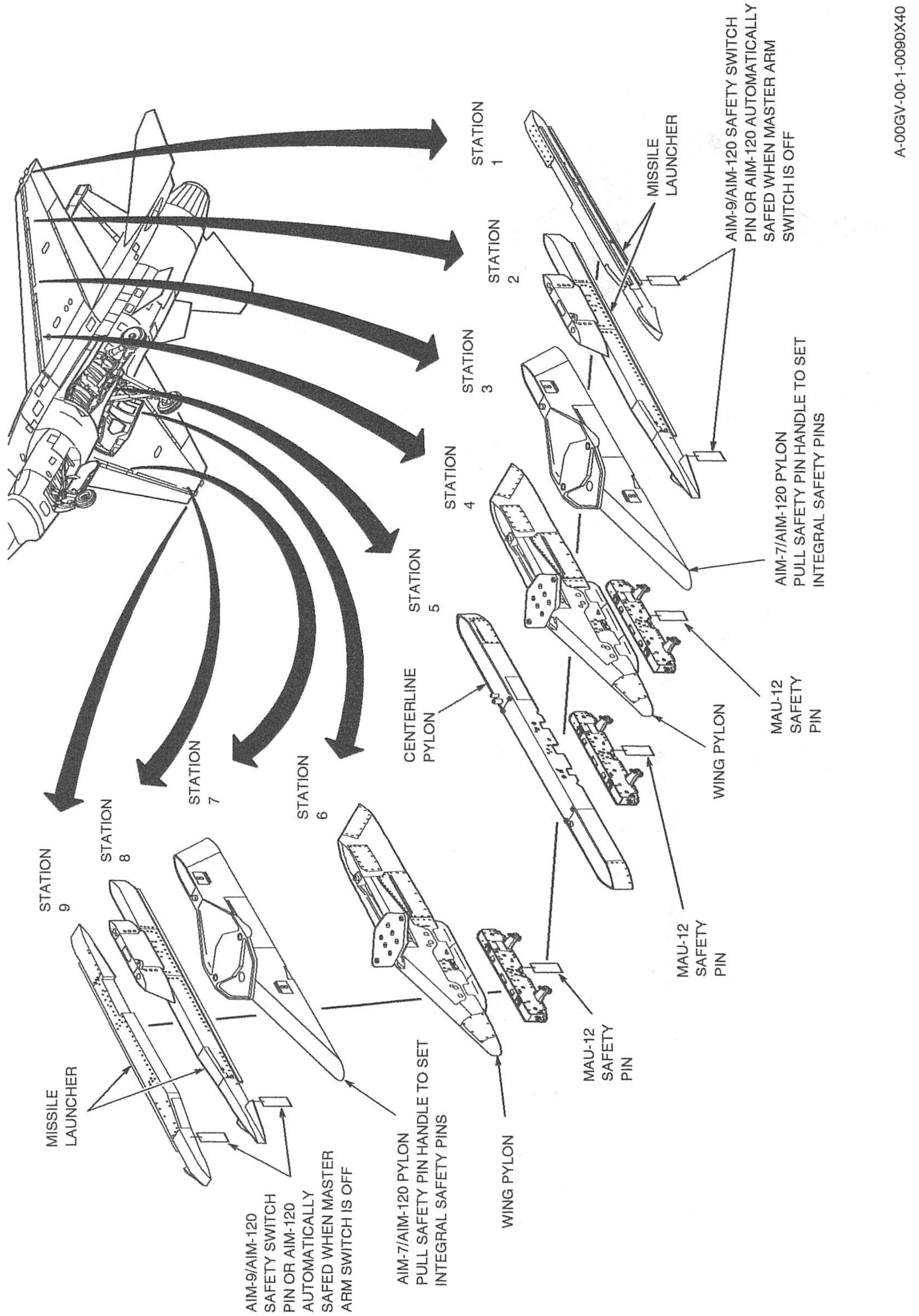

Figure 10-1. Parking 10 Days or Less. (Sheet 3)

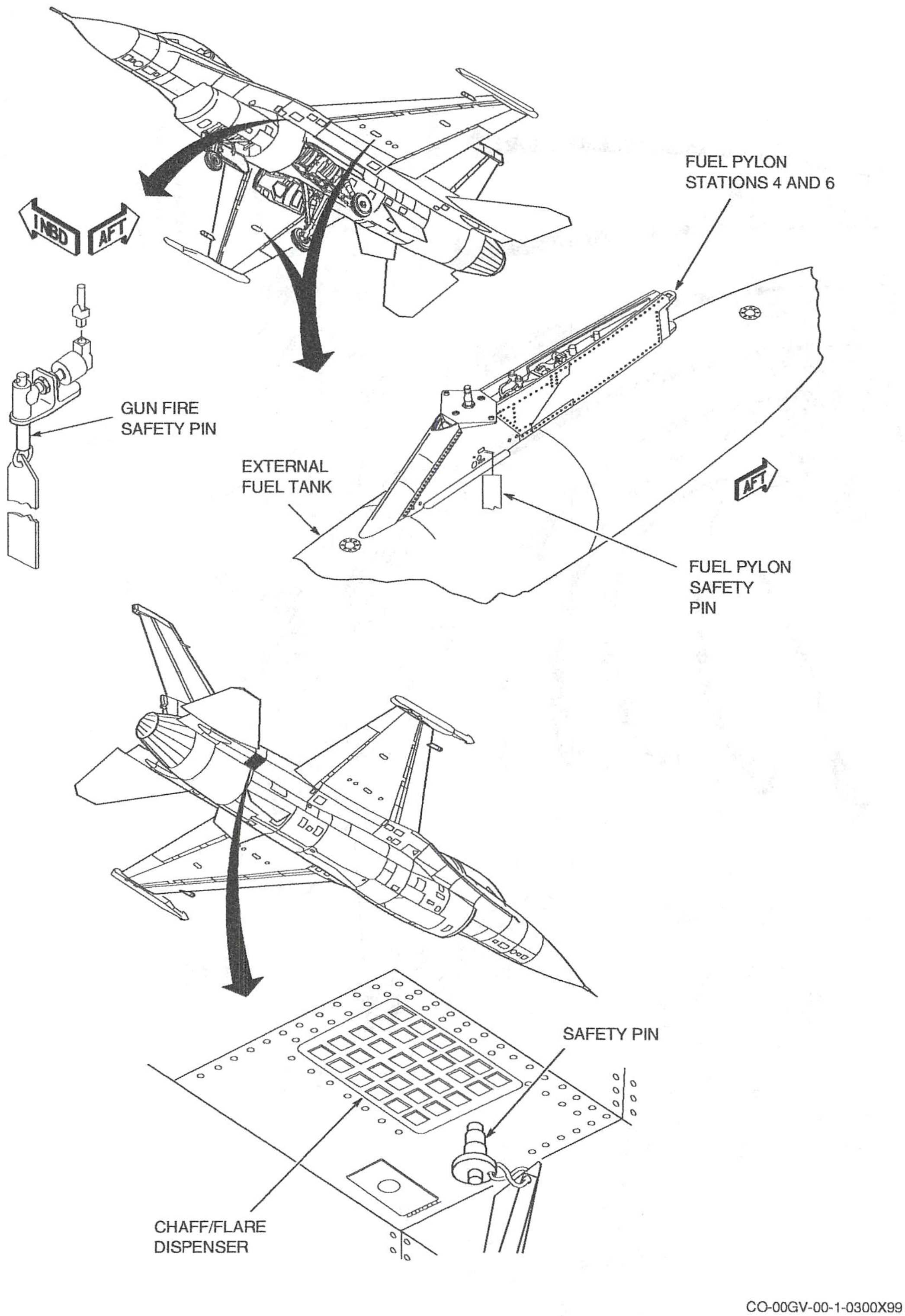

Figure 10-1. Parking 10 Days or Less. (Sheet 4)

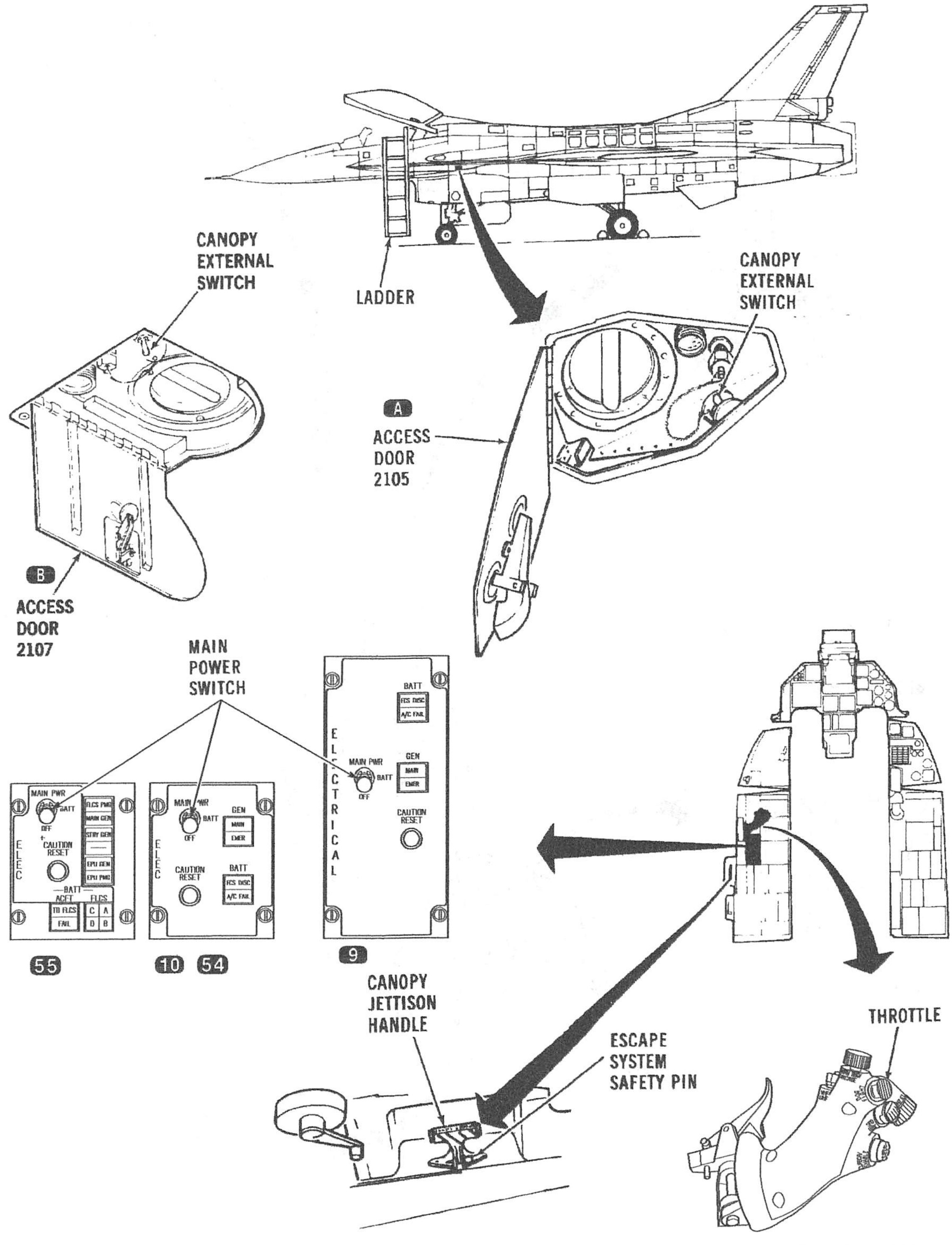

Figure 10-1. Parking 10 Days or Less. (Sheet 5)

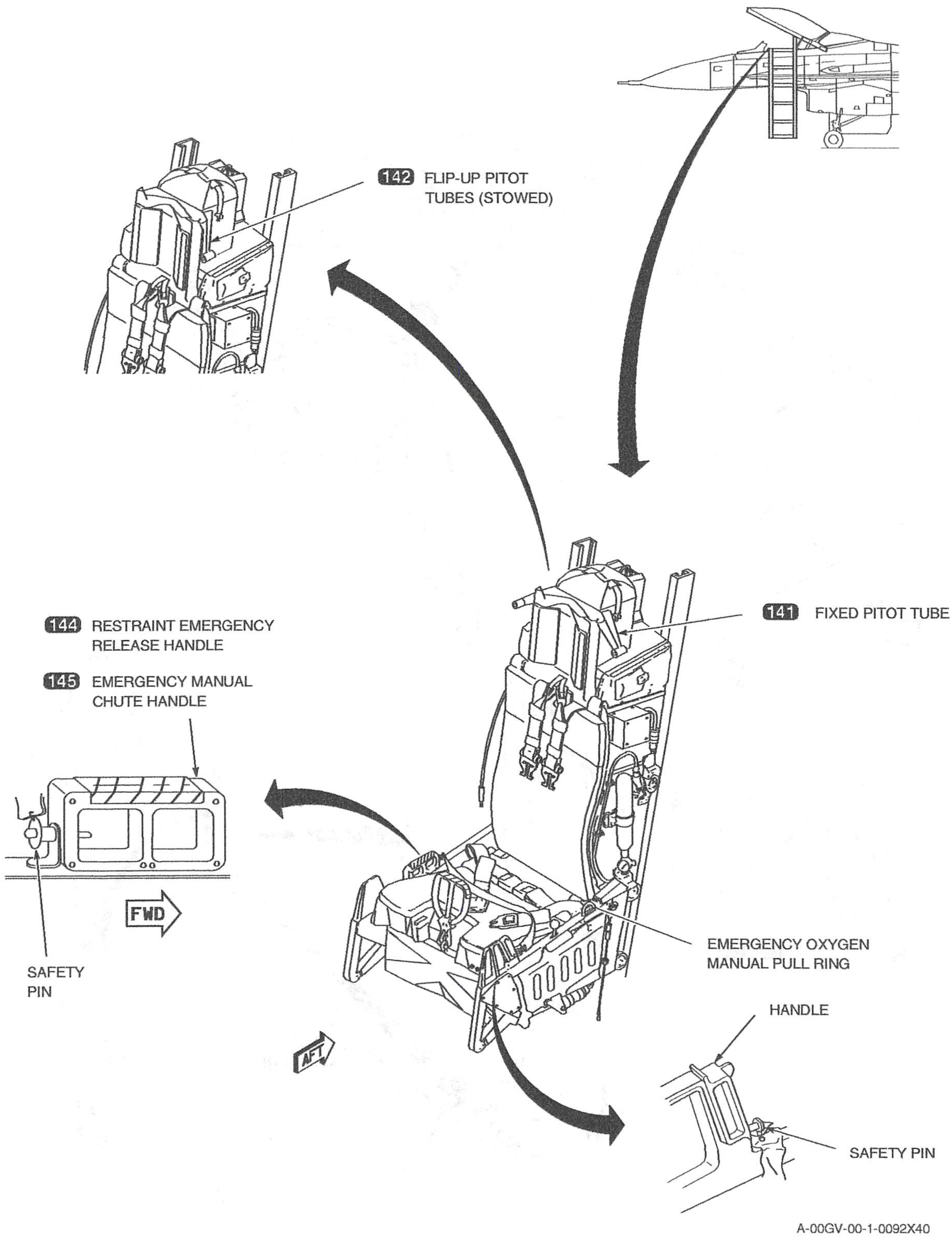

Figure 10-1. Parking 10 Days or Less. (Sheet 6)

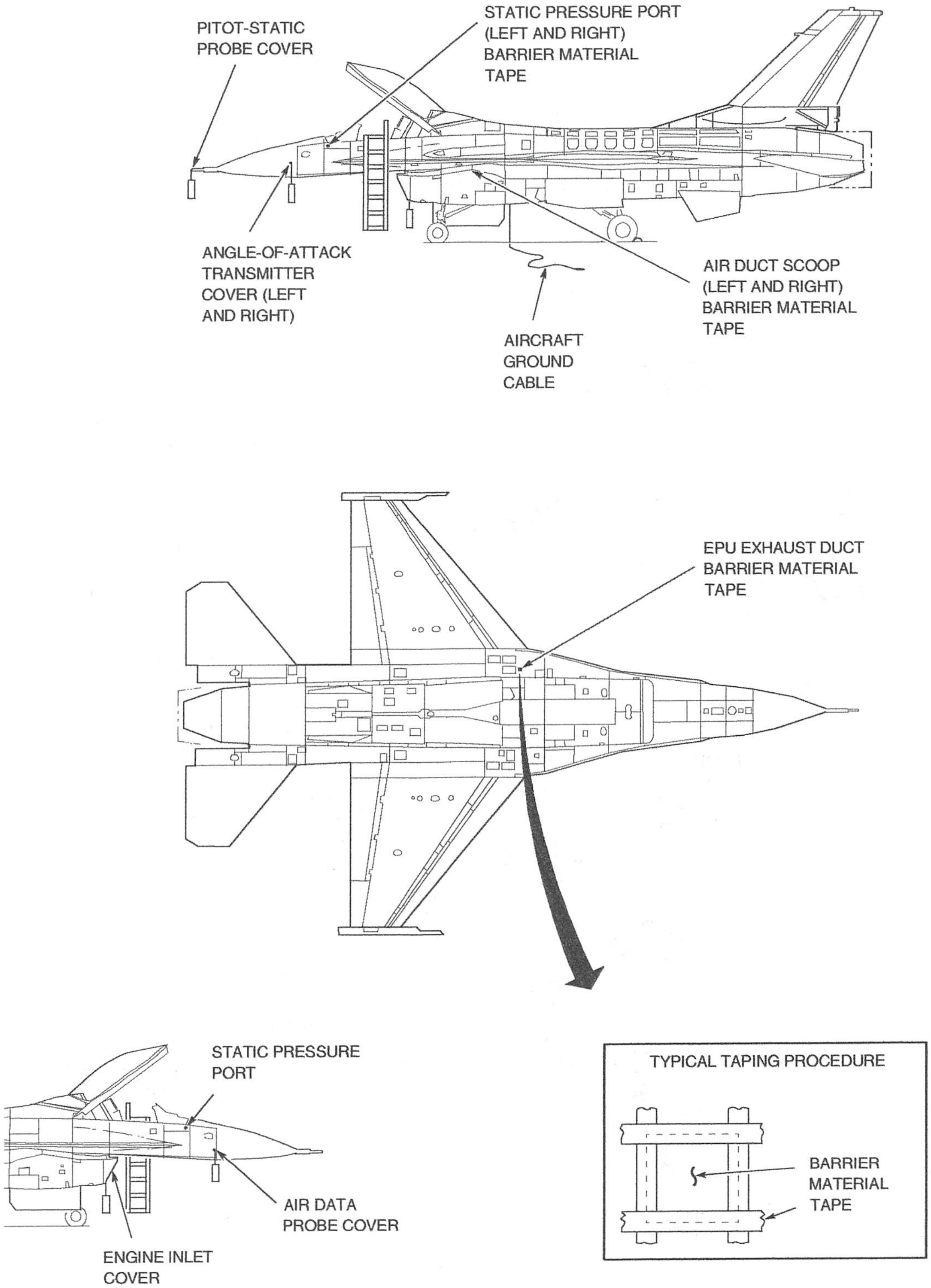

Figure 10-1. Parking 10 Days or Less. (Sheet 7)

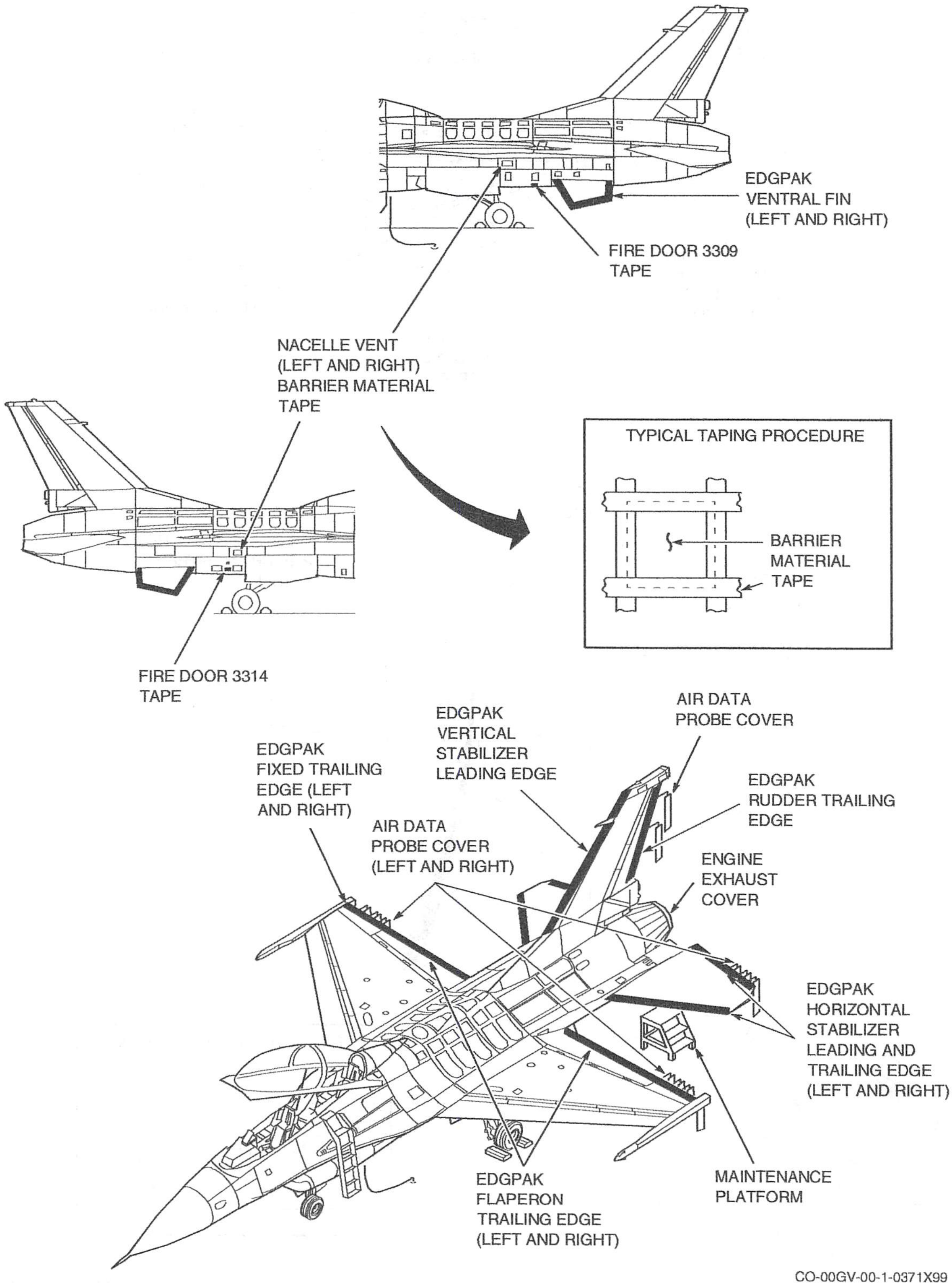

Figure 10-1. Parking 10 Days or Less. (Sheet 8)

10.2.3 Restoring Aircraft Parked 10 Days or Less. Perform the following operations; refer to Figure 10-2.

WARNING

Aircraft has low profile and is easily reached from ground for maintenance. Trailing edges of horizontal stabilizer and wings are very sharp; therefore, care shall be exercised to prevent injury to personnel.

a. Clean exposed area of nose landing gear oleo strut with lint-free cloth and oil.

b. Clean exposed area of nose landing gear, nose gear steering, and nose landing gear door actuator rods with lint-free cloth and preservation oil.

c. Clean exposed area of main landing gear oleo struts with lint-free cloth and preservation oil.

d. Clean exposed area of main landing gear and main landing gear door actuator rods with lint-free cloth and preservation oil.

NOTE

Insure static pressure ports are free of obstructions.

e. Remove tape and barrier material from static pressure ports (left and right).

f. Remove tape and barrier material from EPU exhaust duct opening.

g. Remove tape and barrier material from air duct scoop opening (left and right).

h. Remove tape from fire doors (3309 and 3322).

i. Remove tape and barrier material from nacelle vent openings (left and right).

NOTE

Use maintenance platform as required to accomplish the following procedures.

j. Remove air data probe covers from static dischargers.

k. Remove engine exhaust cover.

l. Remove edgpak from rudder, ventral fins (left and right), flaperon (left and right), vertical and horizontal stabilizers, and fixed trailing edges.

m. Remove maintenance platform from area.

n. Remove crew entrance ladder.

o. Open access door A 2105, B 2107.

p. Set and hold canopy external open/close switch to close until canopy is fully closed; then release switch.

q. Close access door A 2105, B 2107 and secure with latch.

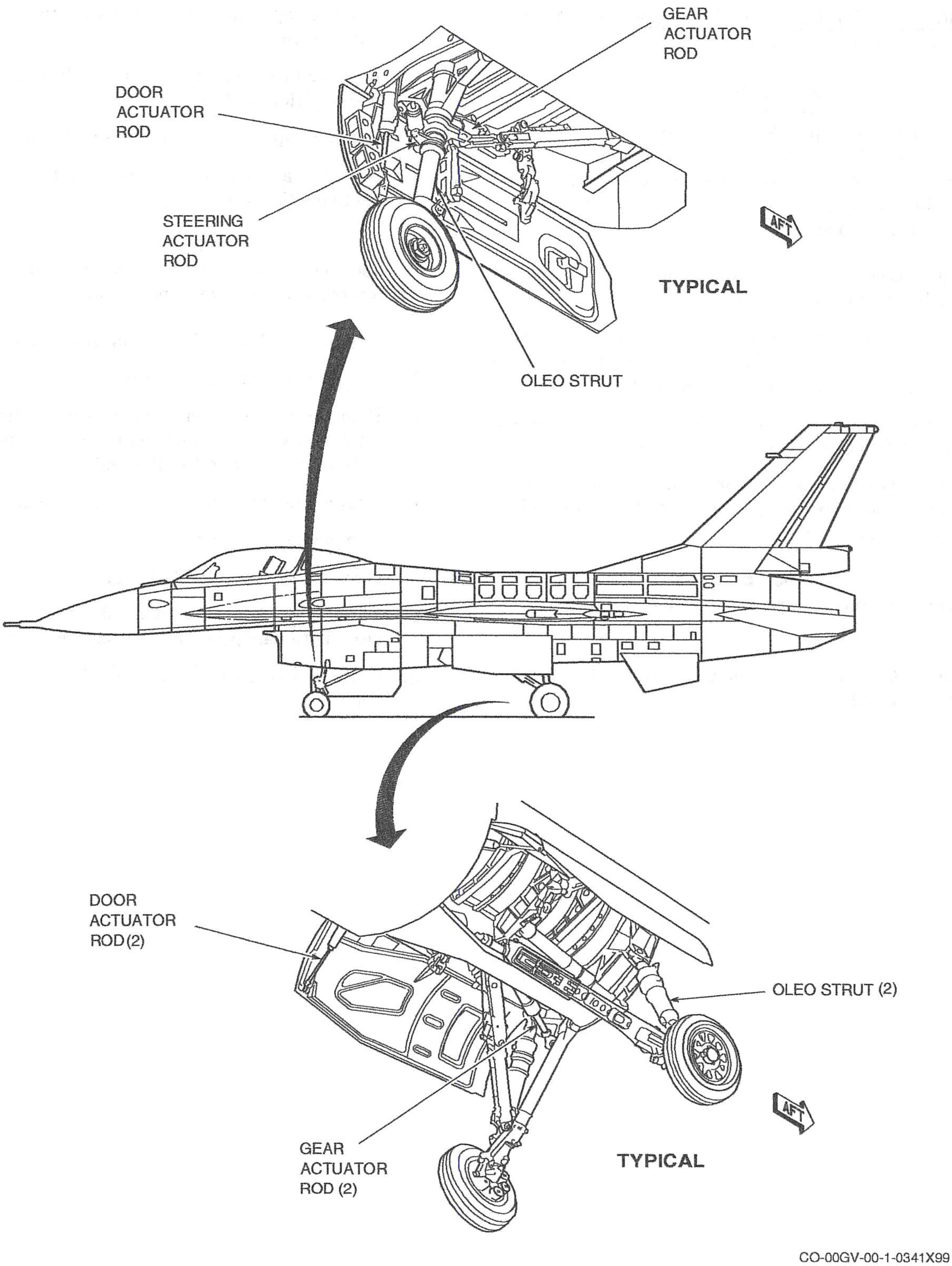

Figure 10-2. Restoring Aircraft Parked 10 Days or Less. (Sheet 1 of 2)

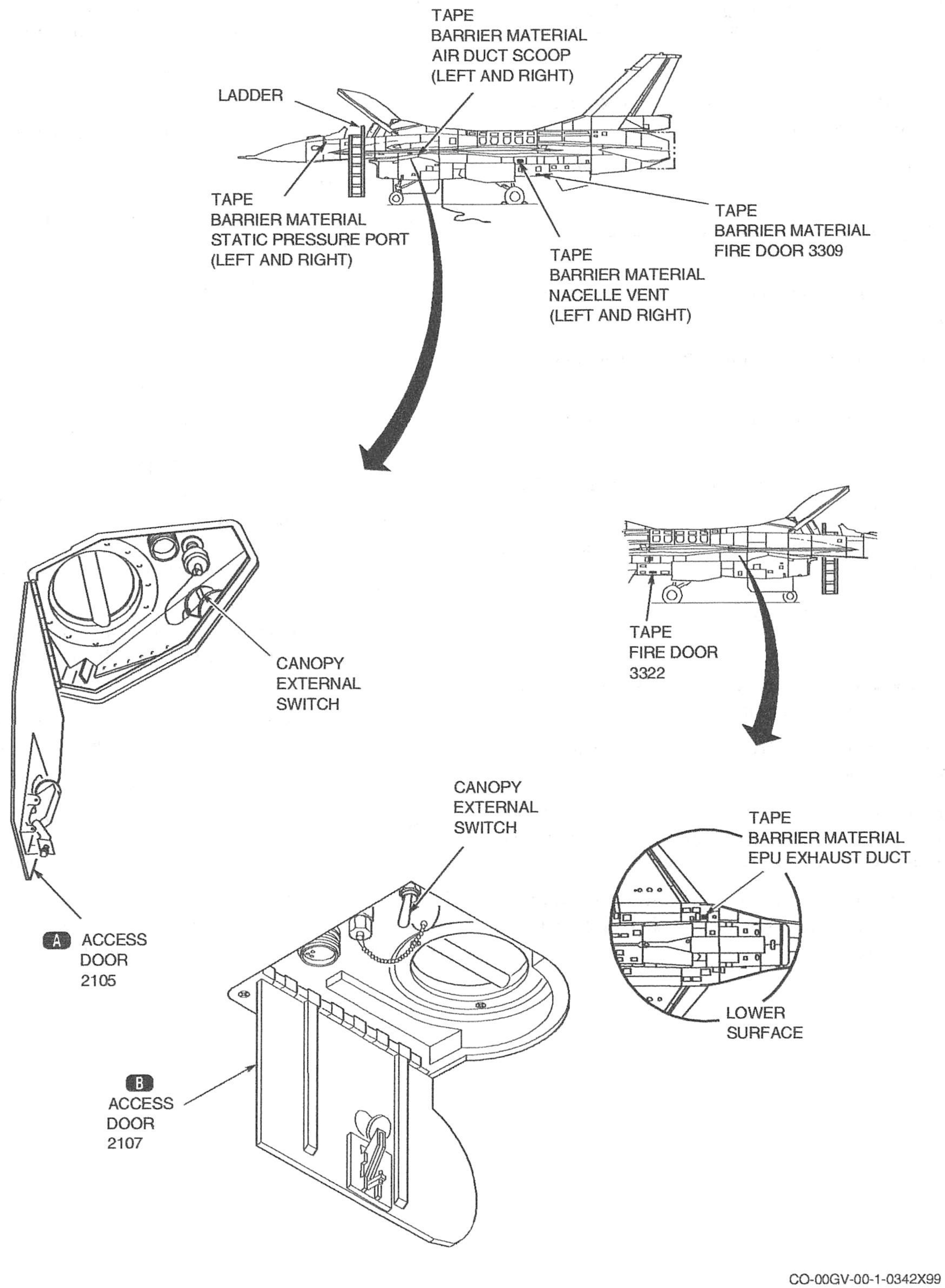

Figure 10-2. Restoring Aircraft Parked 10 Days or Less. (Sheet 2)

10.2.4 Parking Aircraft More Than 10 But Less Than 31 Days. To prepare the aircraft for parking in this time frame, the following conditions are required:

a. Aircraft parked. (Refer to PARKING AIRCRAFT 10 DAYS OR LESS (10.2.2).)

b. Pneumatic system serviced in accordance with JG12-10-09 through -14.

c. Landing gear tires serviced in accordance with JG12-10-10.

d. Landing gear struts serviced in accordance with JG12-10-10.

e. Oxygen system serviced in accordance with JG12-10-04.

f. Fuel system fully serviced in accordance with JG12-10-01.

g. Moisture drained from each fuel tank in accordance with JG12-10-03.

h. Engine oil system fully serviced in accordance with JG12-10-05.

10.2.4.1 Perform the following operations; refer to Figure 10-3.

a. Clean exposed area of nose gear oleo strut with lint-free cloth and preservation oil.

b. Wrap nose gear oleo strut with barrier material and secure with tape.

c. Clean exposed area of nose landing gear, nose gear steering, and nose landing gear door actuator rods with lint-free cloth and preservation oil.

d. Wrap nose landing gear, nose gear steering, and nose landing gear door actuator rods with barrier material and secure with tape.

e. Clean exposed area of main landing gear oleo struts with lint-free cloth and preservation oil.

f. Wrap main gear oleo struts with barrier material and secure with tape.

g. Clean exposed areas of main landing gear and main gear door actuator rods with lint-free cloth and preservation oil.

h. Wrap main landing gear and gear door actuator rods with barrier material and secure with tape.

i. Secure pitot-static probe cover with tape.

j. Secure angle-of-attack transmitter covers (left and right) with tape.

k. Secure air data probe cover with tape.

l. Secure engine inlet cover with tape.

NOTE

Use maintenance platform as required to accomplish the following procedures.

m. Secure air data probe covers on static dischargers with tape.

n. Secure edgpak on rudder, ventral fins (left and right), flaperon (left and right), and fixed trailing edges with tape.

o. Secure edgpak on vertical stabilizer leading edge and horizontal stabilizer leading and trailing edges.

p. Remove maintenance platform from area.

q. Install engine exhaust cover with tape.

r. Moor aircraft. (Refer to Mooring, MOORING (10.3).)

10.2.4.2 During this time frame, the parked aircraft does not require any maintenance inspection operations except as established by the Chief of Maintenance.

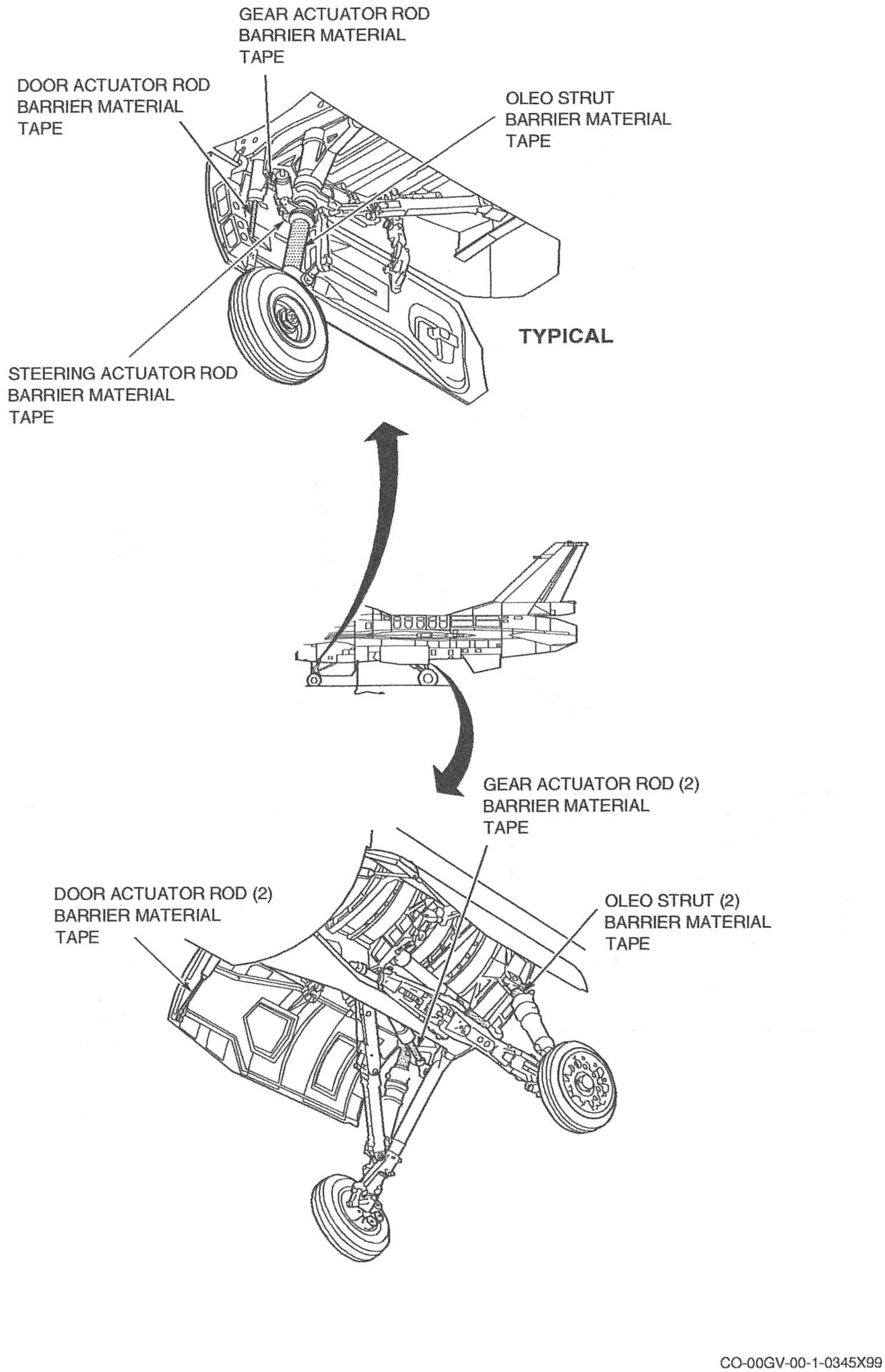

Figure 10-3. Parking Aircraft More Than 10 But Less Than 31 Days. (Sheet 1 of 3)

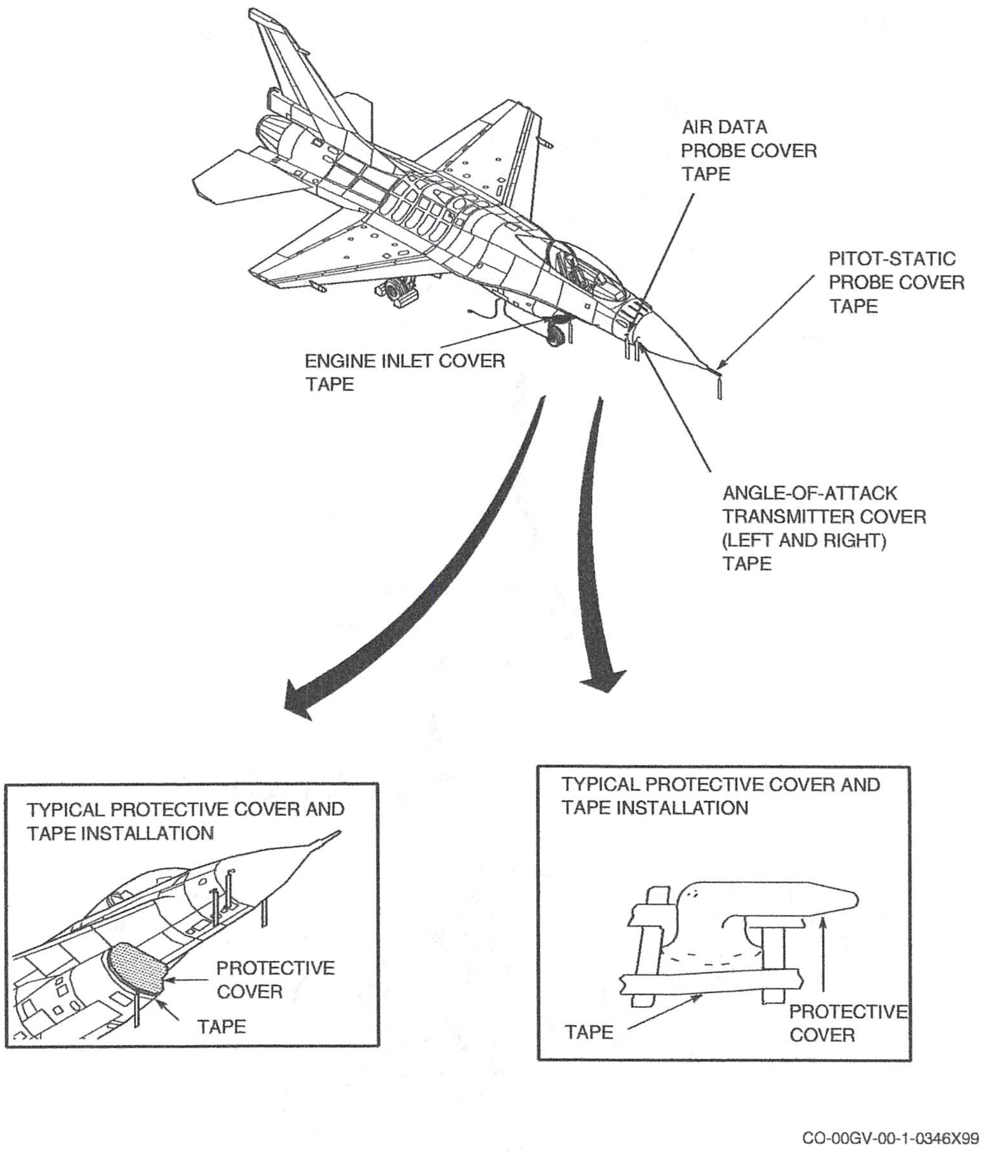

Figure 10-3. Parking Aircraft More Than 10 But Less Than 31 Days. (Sheet 2)

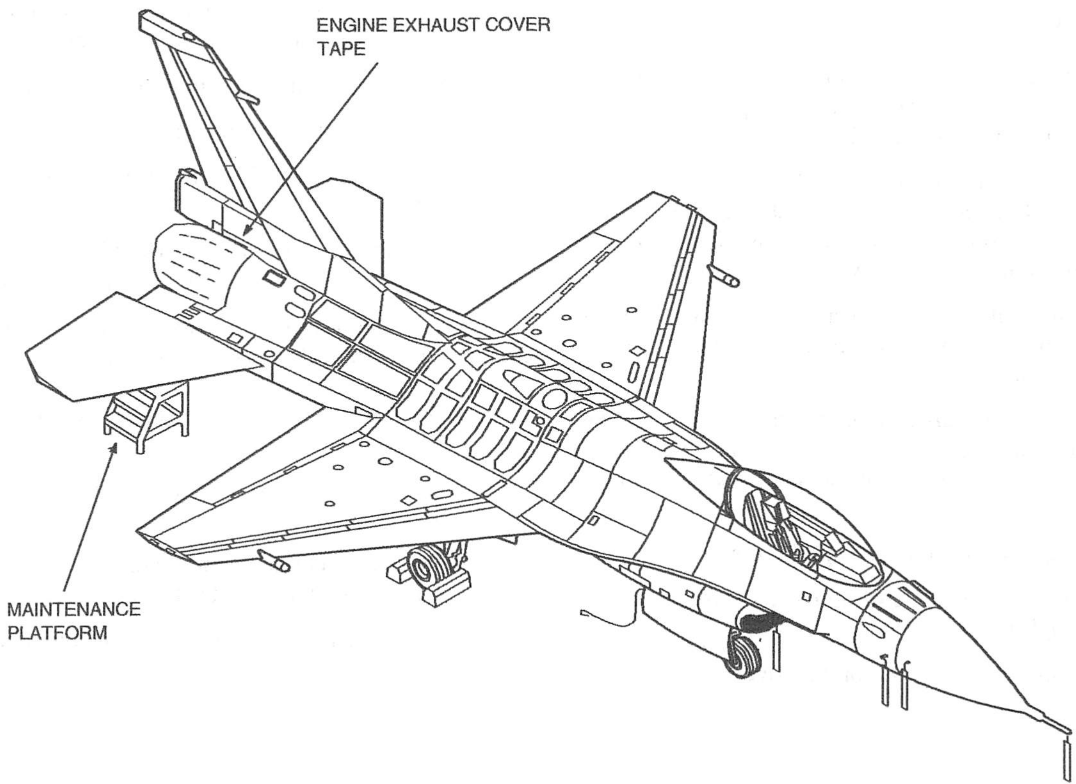

Figure 10-3. Parking Aircraft More Than 10 But Less Than 31 Days. (Sheet 3)

10.2.5 Restoring Aircraft Parked More Than 10 But Less Than 31 Days. Perform the following operations; refer to Figure 10-4.

WARNING

Aircraft has low profile and is easily reached from ground for maintenance. Trailing edges of horizontal stabilizer and wing are very sharp; therefore, care shall be used to prevent injury to personnel.

a. Remove tape and barrier material from nose landing gear oleo strut; then clean by applying preservation oil on oleo strut with lint-free cloth.

b. Remove tape and barrier material from actuator rods of nose landing gear, nose gear steering, and nose gear door actuator rods. Clean by applying preservation oil on actuator rods with lint-free cloth.

c. Remove tape and barrier material from main landing gear oleo struts. Clean by applying preservation oil on oleo struts with lint-free cloth.

d. Remove tape and barrier material from main landing gear and main gear door actuator rods. Clean by applying preservation oil on actuator rods with lint-free cloth.

e. Remove tape from pitot-static probe cover.

f. Remove tape from angle-of-attack transmitter covers (left and right).

g. Remove tape from air data probe cover.

h. Remove tape from engine inlet cover.

NOTE

Use maintenance platform as required to accomplish the following procedures.

i. Remove tape from static discharger air data probe covers.

j. Remove edgpak from the rudder, ventral fins (left and right), flaperon (left and right), vertical and horizontal stabilizers, and fixed trailing edges.

k. Remove maintenance platform from area.

l. Remove tape from engine exhaust cover.

m. Restore aircraft Mooring. (Refer to Mooring, MOORING (10.3).)

n. Restore aircraft parking (RESTORING AIRCRAFT PARKED 10 DAYS OR LESS (10.2.3)).

10.2.5.1 After this time frame restoration, the parked aircraft requires the following operations:

a. Drain water from fuel tanks in accordance with JG12-10-03.

b. Service oxygen system in accordance with JG12-10-04.

c. Service pneumatic and hydraulic systems in accordance with JG12-10-09 through -14.

d. Service engine oil system in accordance with JG12-10-05.

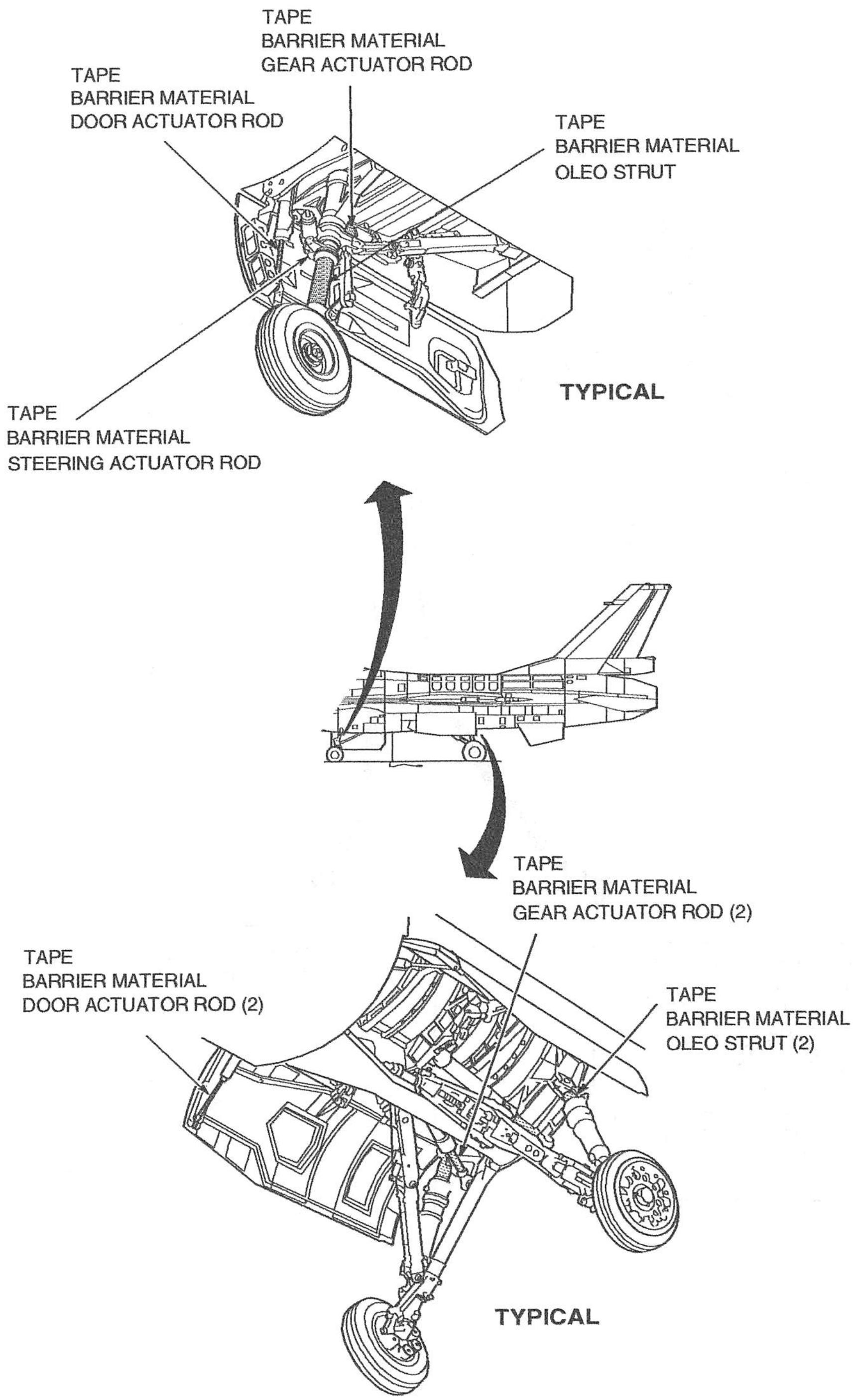

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Figure 10-4. Restoring Aircraft Parked More Than 10 But Less Than 31 Days. (Sheet 1 of 2)

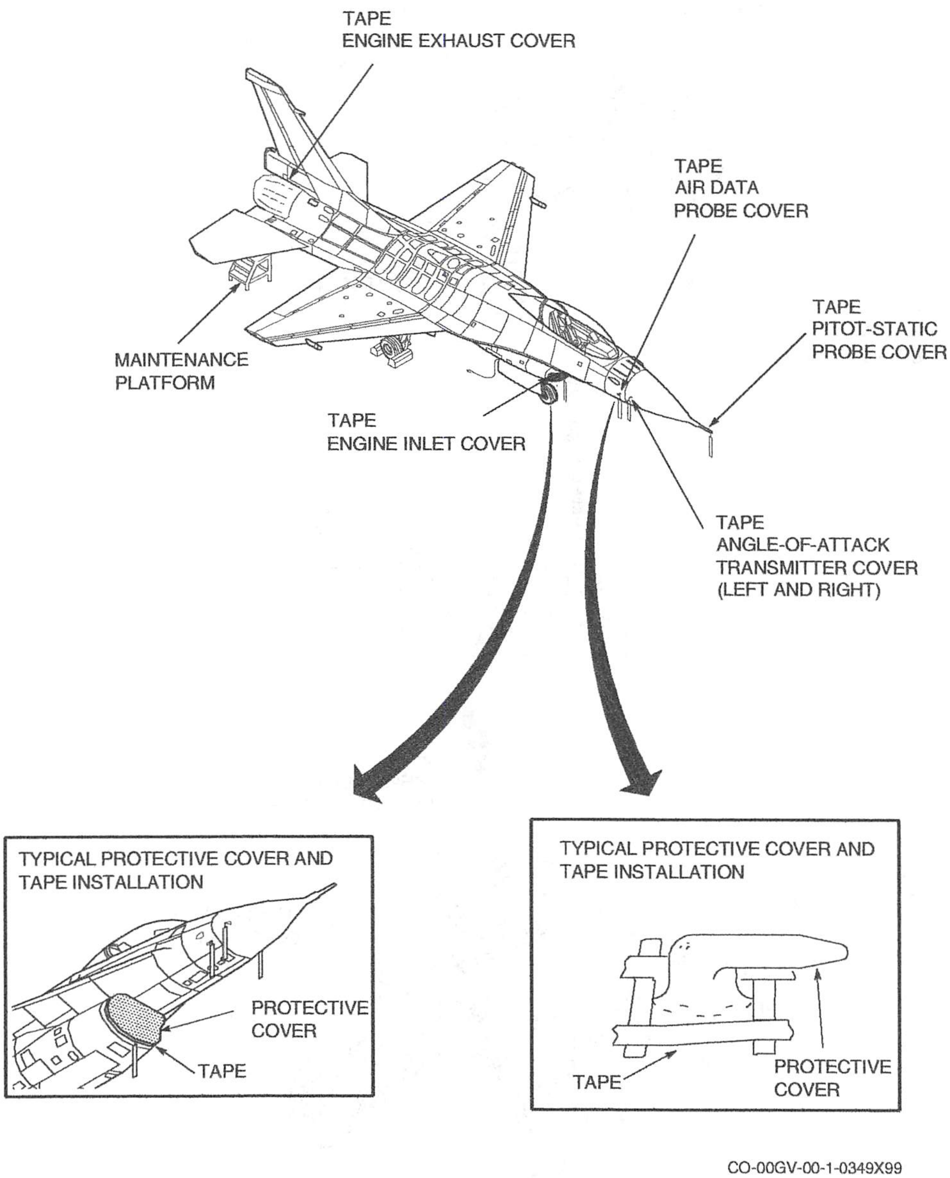

Figure 10-4. Restoring Aircraft Parked More Than 10 But Less Than 31 Days. (Sheet 2)

10.2.6 Parking Aircraft More Than 30 But Less Than 91 Days.

WARNING

Aircraft has low profile and is easily reached from ground for maintenance. Trailing edges of horizontal stabilizer and wing are very sharp; therefore, care shall be used to prevent injury to personnel.

To prepare the aircraft for parking in this time frame, the following conditions are required:

a. Aircraft parked. (Refer to PARKING AIRCRAFT 10 DAYS OR LESS (10.2.2) and, PARKING AIRCRAFT MORE THAN 10 BUT LESS THAN 31 DAYS (10.2.4).)

b. Aircraft battery removed in accordance with JG24-32-02.

c. Flight control batteries removed in accordance with JG24-29-07.

d. Inertial navigation set battery removed in accordance with JG94-63-05.

e. Hydrazine fuel tank removed in accordance with JG49-12-01.

f. Engine oil system fully serviced in accordance with JG12-10-05.

g. Engine dry motoring accomplished in accordance with JG70-00-03.

h. All pneumatic storage containers discharged in accordance with JG12-10-09 through -14.

10.2.6.1 Perform the following operations (Figure 10-5):

NOTE

Use maintenance platform as required to accomplish following procedures.

a. Apply tape over access panel seams on aircraft upper surface.

b. Cover aircraft antennas with barrier material and secure with tape.

c. Cover nose radome with barrier material and secure with tape.

d. Cover wing leading edge flaps with barrier material and secure with tape.

e. Cover wingtips and launchers with barrier material and secure with tape.

f. Cover vertical stabilizer tip with barrier material and secure with tape.

g. Seal gun port opening with barrier material and secure with tape.

h. Wrap main and nose landing gear wheels with barrier material and secure with tape.

10.2.6.2 During this time frame, the following operations will be accomplished:

a. Jack and turn main gear wheels every 15 days in accordance with JG07-10-01.

b. Jack and turn nose gear wheel every 15 days in accordance with JG07-10-01.

c. Operations established by the Chief of Maintenance.

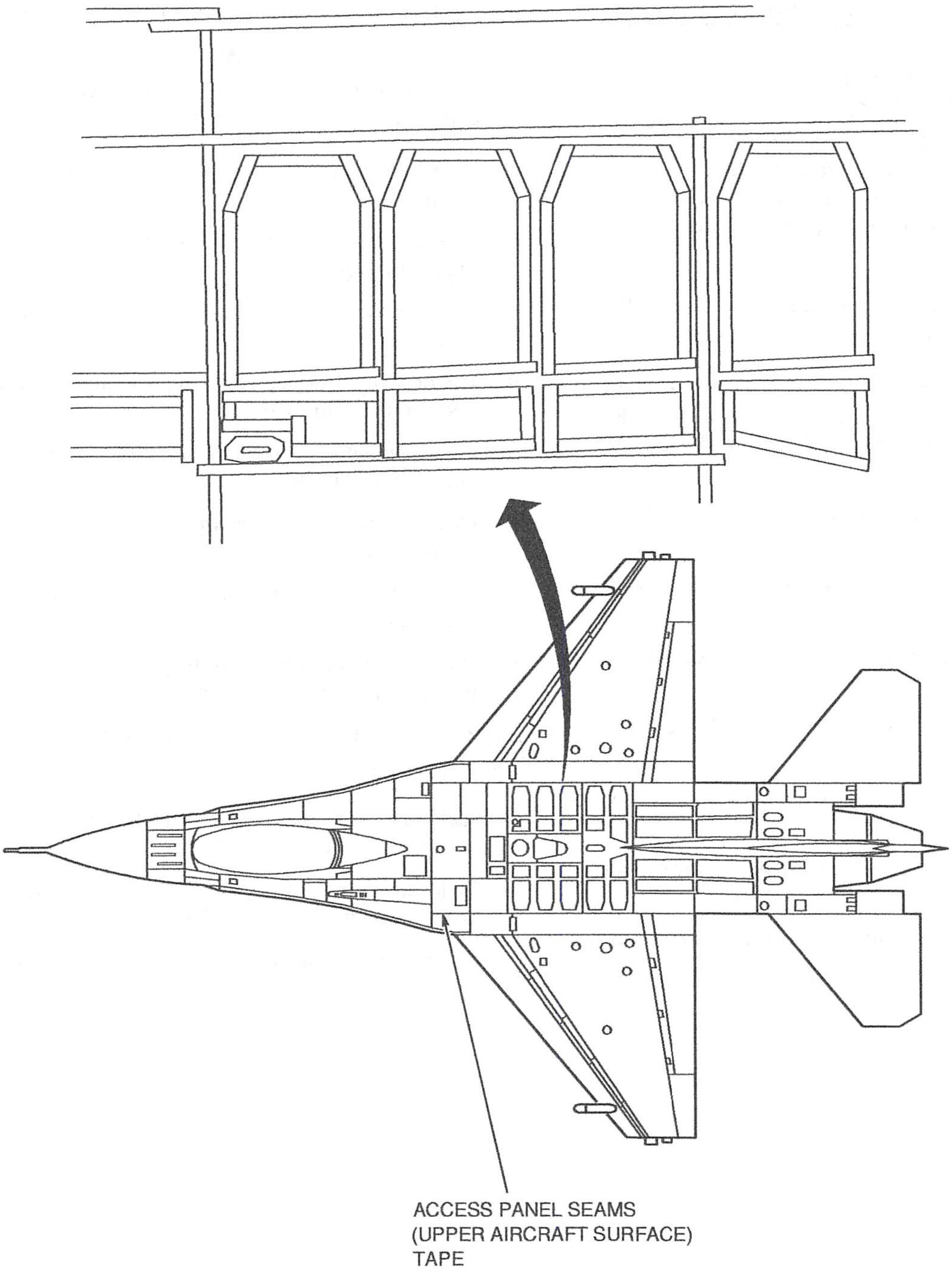

Figure 10-5. Parking Aircraft More Than 30 But Less Than 91 Days. (Sheet 1 of 3)

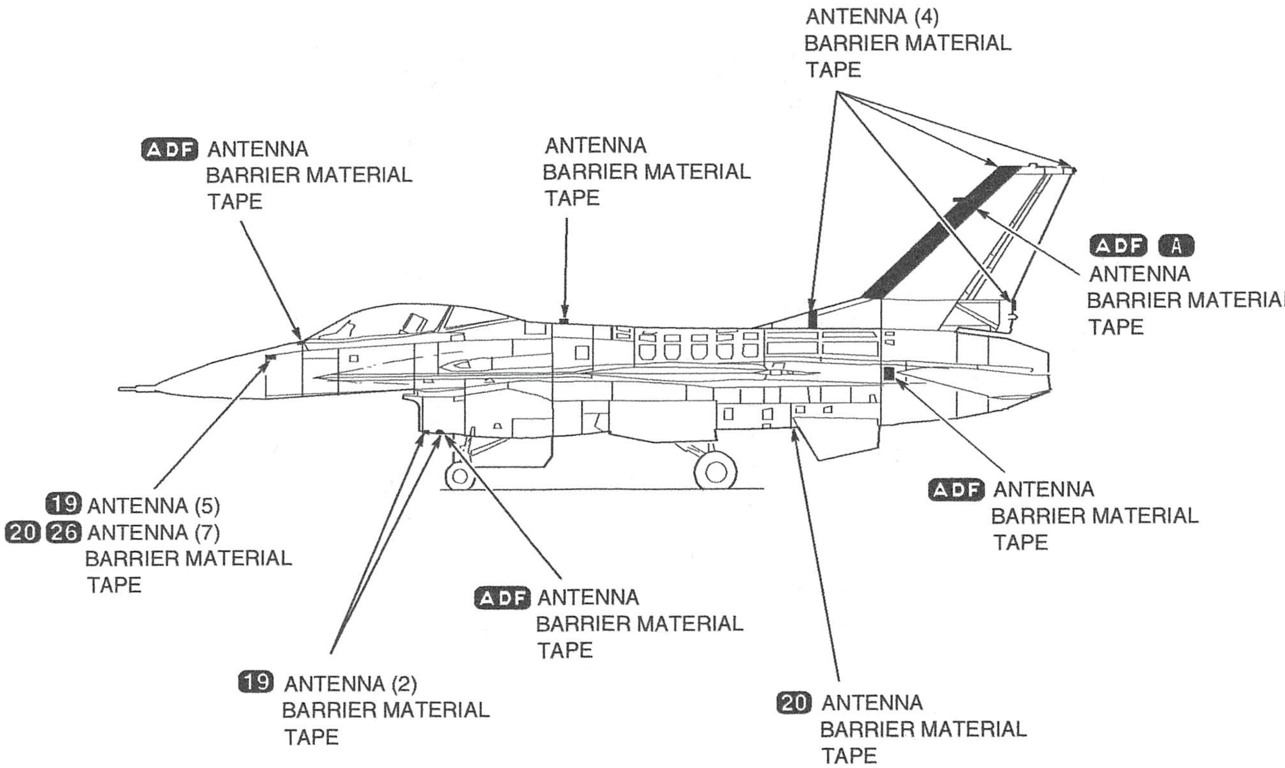

Figure 10-5. Parking Aircraft More Than 30 But Less Than 91 Days. (Sheet 2)

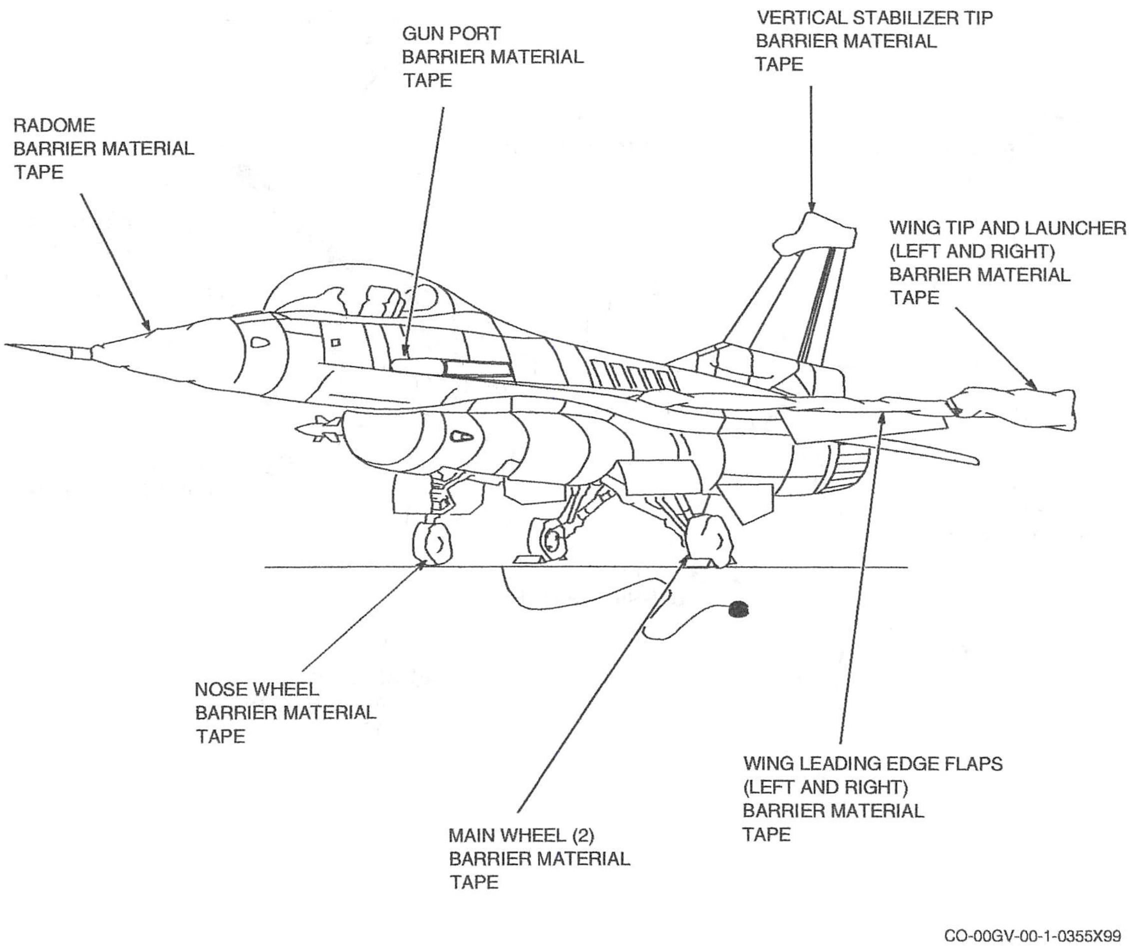

Figure 10-5. Parking Aircraft More Than 30 But Less Than 91 Days. (Sheet 3)

10.2.7 Restoring Aircraft Parked More Than 30 But Less Than 91 Days (Figure 10-6).

NOTE

Use maintenance platform as required to accomplish following procedures.

a. Remove tape from access panel seams on upper aircraft surface.

b. Remove tape and barrier material from nose radome.

c. Remove tape and barrier material from wing leading edge flaps.

d. Remove tape and barrier material from wingtips and launchers.

e. Remove tape and barrier material from vertical stabilizer tip.

f. Remove tape and barrier material from gun port opening.

g. Remove tape and barrier material from main and nose gear wheels.

h. Remove tape and barrier material from aircraft antennas.

i. Restore aircraft parking (RESTORING AIRCRAFT PARKED 10 DAYS OR LESS (10.2.3) and RESTORING AIRCRAFT PARKED MORE THAN 10 BUT LESS THAN 31 DAYS (10.2.5)).

10.2.7.1 After this time frame restoration, the parked aircraft requires the following operations:

a. Service fuel system in accordance with JG12-10-01.

b. Service landing gear tires in accordance with JG12-10-10.

c. Service landing gear in accordance with JG12-10-10.

d. Install hydrazine fuel tank in accordance with JG49-12-01.

e. Install aircraft battery in accordance with JG24-32-02.

f. Install flight control batteries in accordance with JG24-29-07.

g. Install inertial navigation unit battery in accordance with JG94-77-05.

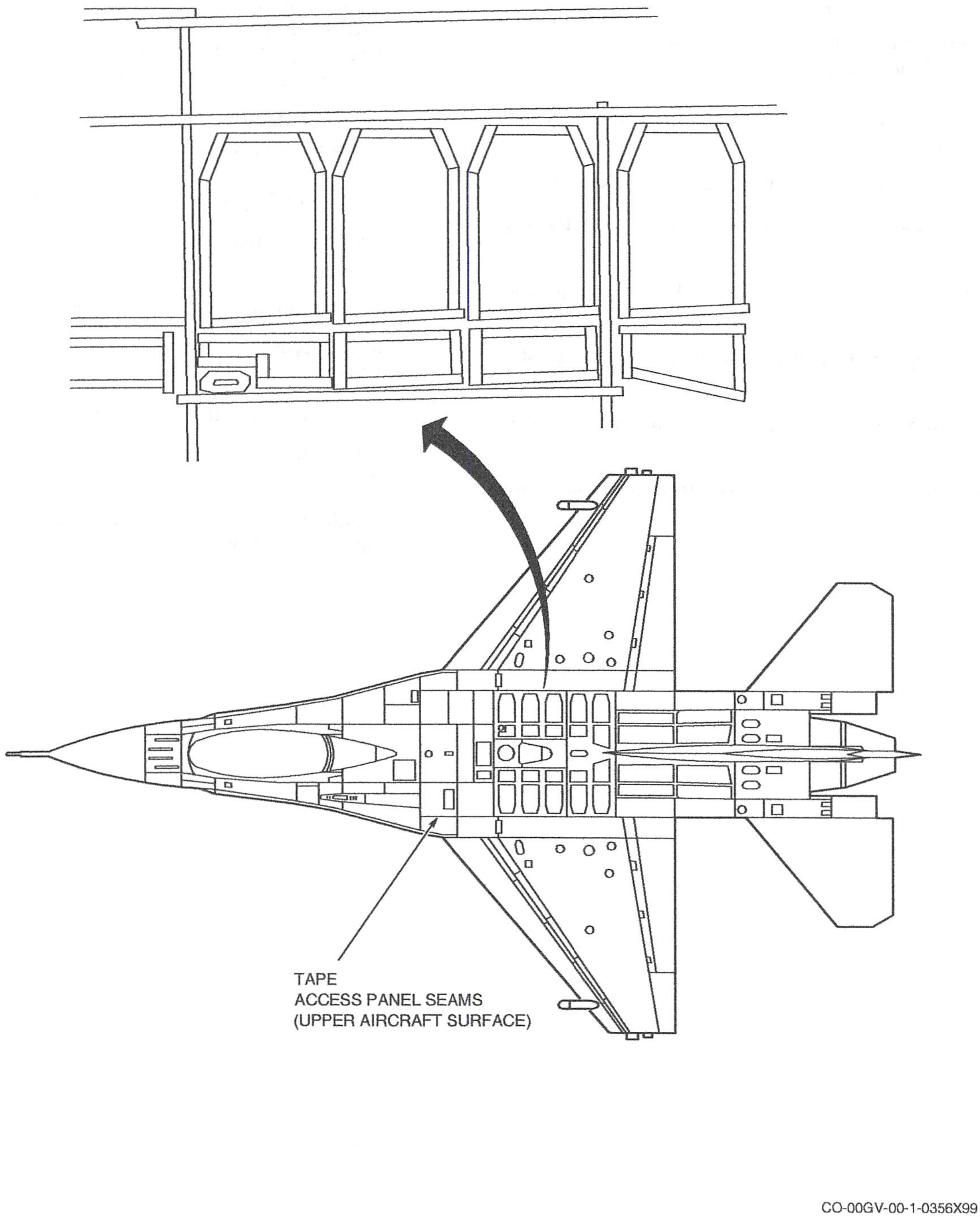

Figure 10-6. Restoring Aircraft Parked More Than 30 But Less Than 91 Days. (Sheet 1 of 3)

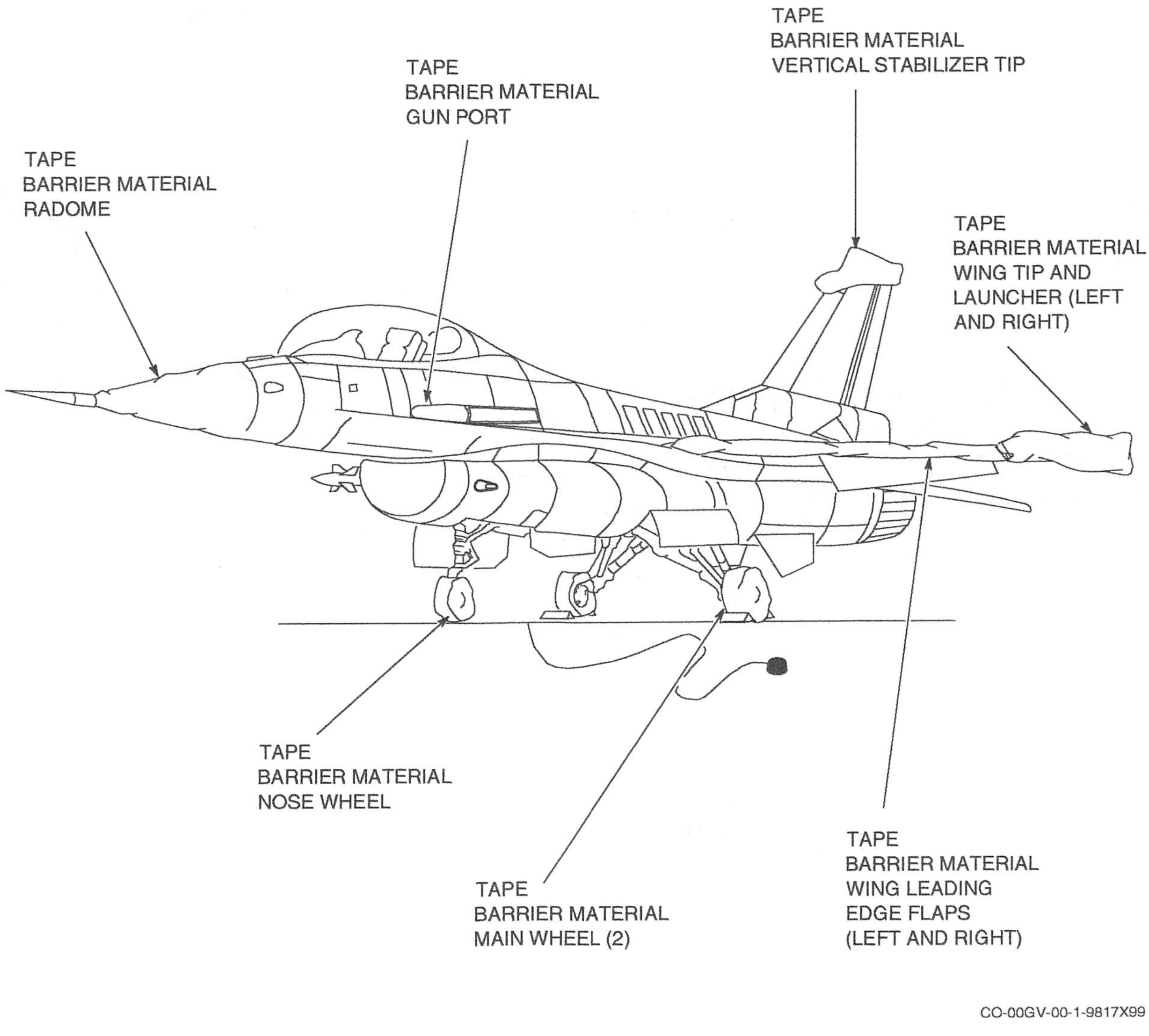

Figure 10-6. Restoring Aircraft Parked More Than 30 But Less Than 91 Days. (Sheet 2)

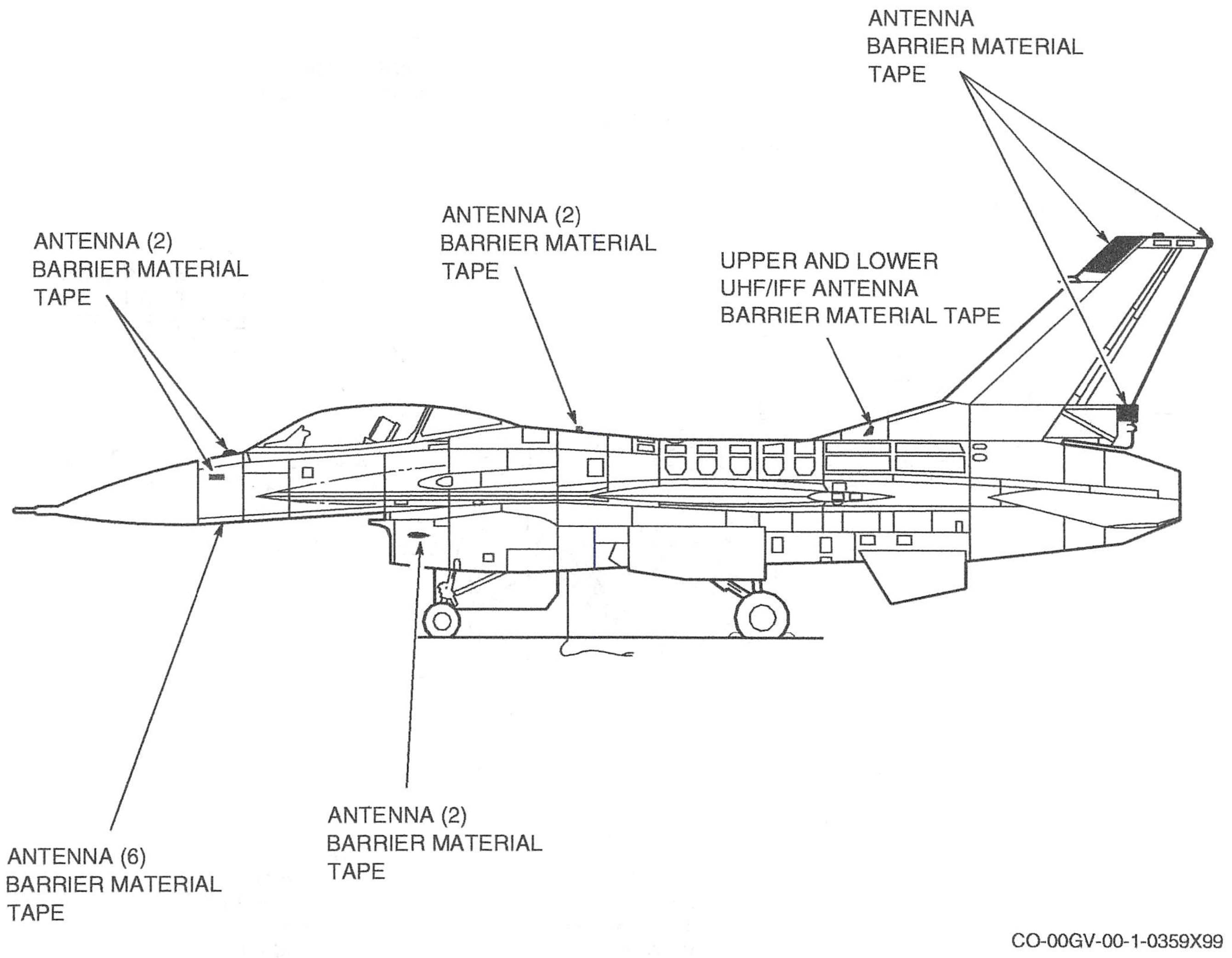

Figure 10-6. Restoring Aircraft Parked More Than 30 But Less Than 91 Days. (Sheet 3)

10.2.8 Parking Aircraft More Than 90 Days. To prepare the aircraft for parking in this time frame, the following conditions are required:

a. Aircraft parked. (Refer to PARKING AIRCRAFT MORE THAN 30 BUT LESS THAN 91 DAYS (10.2.6), PARKING AIRCRAFT 10 DAYS OR LESS (10.2.2) and, PARKING AIRCRAFT MORE THAN 10 BUT LESS THAN 31 DAYS (10.2.4))

b. Canopy closed and polished in accordance with JG12-30-01.

10.2.8.1 Perform the following operations:

NOTE

Use maintenance platform as required to accomplish the following procedures.

a. Apply tape around in-flight refueling receptacle door. (Refer to Figure 10-7.)

b. Cover canopy with two layers of barrier material. Apply each layer individually, pull tight, and attach by taping to the metal surface of the canopy frame.

10.2.8.2 During this time frame, the parked aircraft will be inspected and serviced as required in accordance with TO 1-1-17.

10.2.9 Restoring Aircraft Parked More Than 90 Days. Perform the following operations

a. Remove tape from seams around in-flight refueling receptacle door. (Refer to Figure 10-7.)

b. Remove canopy tape and barrier material.

c. Restore aircraft parking (RESTORING AIRCRAFT PARKED 10 DAYS OR LESS (10.2.3), RESTORING AIRCRAFT PARKED MORE THAN 10 BUT LESS THAN 31 DAYS (10.2.5), and RESTORING AIRCRAFT PARKED MORE THAN 30 BUT LESS THAN 91 DAYS (FIGURE 10-6) (10.2.7)).

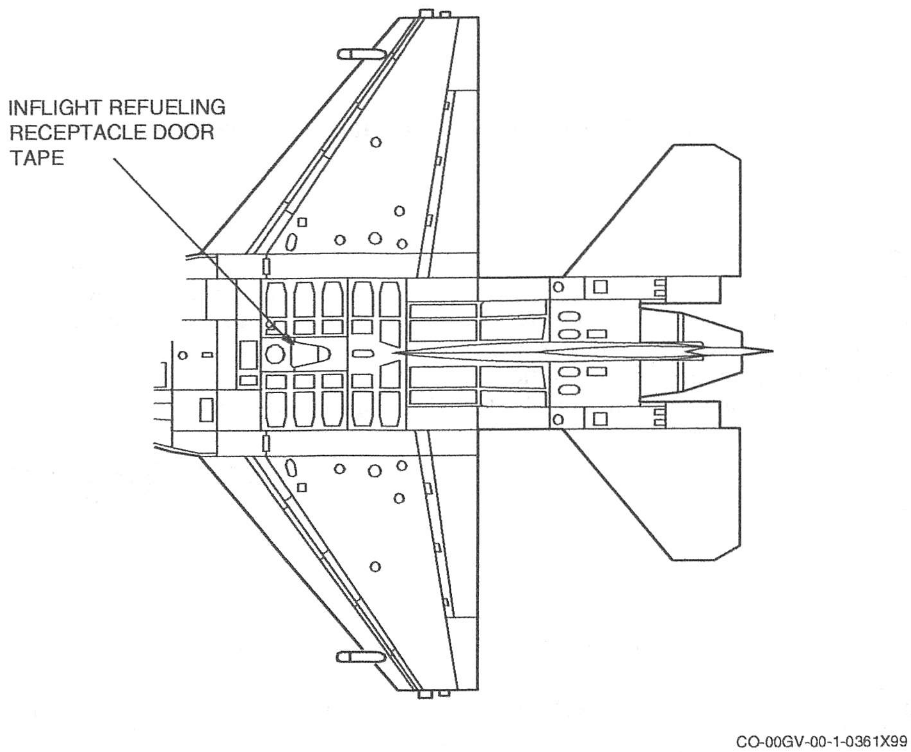

Figure 10-7. Parking Aircraft More Than 90 Days. (Sheet 1 of 2)

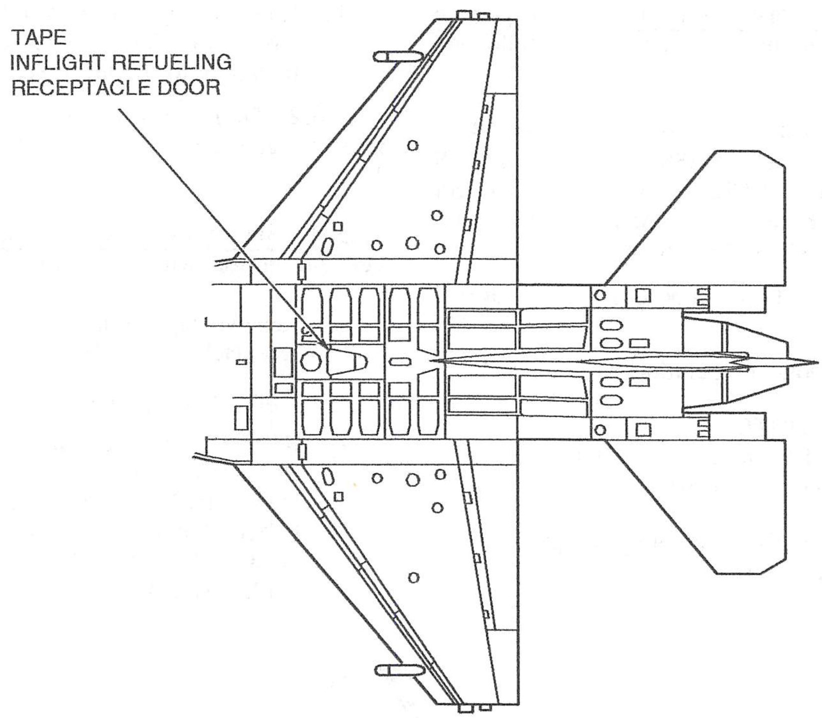

Figure 10-7. Parking Aircraft More Than 90 Days. (Sheet 2)

10.3 MOORING.

The aircraft requires procedures for mooring and aircraft safety under all conditions of maintenance, weather, storage, aircraft configuration, and/or operating ground surfaces. The detail procedures for aircraft safety are in TO 1F-16( )-2-10JG-00-1.

10.4 MOORING.

The aircraft does not normally require mooring; however, if wind velocities and surface conditions are unsafe, the aircraft shall be headed into the wind and the nose and main landing gears tied down to the ground as required by wind velocity. To moor, attach rope to tiedown points and arrange as shown in Figure 10-8.

10.4.1 Mooring Support Equipment Required. Mooring support equipment is listed in Table 10-2.

Table 10-2. Mooring Support Equipment.

PART NUMBER	NOMENCLATURE	ALTERNATE	USE AND APPLICATION
COML	Chock Assembly - Ice, Wheel Adjustable Type (if available)	None	To chock wheels
MIL-R-24050	Nylon Rope, Double Braided (3/4-inch diameter)	FDC 1040M1, Tie down, Cargo, Aircraft	Mooring line
42D6594-2 (80049)	Chock Assembly, Wheel Adjustable, Rope-Type	Equivalent	To chock wheels

10.4.2 Landing Gear Mooring. Landing gear Mooring is required only during high winds and adverse ramp conditions to secure aircraft against movement which may result in aircraft damage. Mooring requirements are based upon wind velocity, aircraft weight, and ramp surface conditions.

a. For aircraft parked on dry or wet ramp, Mooring will not be required for winds of less than 70 knots.

b. For aircraft parked on icy or hard-packed snow ramp, the minimum wind speed requiring mooring and the maximum wind speed allowable are a function of the aircraft gross weight (see Figure 10-9).

NOTE

For aircraft with less than 15,000 pounds gross weight, i.e., engine removed, hangar the aircraft for winds above 30 knots.

10.4.2.1 Requirements and procedures for aircraft mooring must be combined with good judgment, experience, safety, and maintenance practices. Tiedown lines shall always be pulled taut and checked during the high wind period to insure the lines have not slackened. Wheels shall always be chocked. Chocks shall be laced or tied together whenever aircraft is left unattended. When the ramp is covered with ice or hard-packed snow, ice chocks should be used, if possible. Keep tiedown lines as short as possible.

10.4.2.2 Mooring Procedures. Perform the following operations; refer to Figure 10-8.

CAUTION

When attaching nose landing gear left tiedown rope, be careful to place the rope under the hydraulic lines and wiring harness or damage to equipment may result.

a. Tie nose gear down using two nylon ropes. Tie one end of a rope to lower end of curved arm of the nose landing gear piston assembly. Extend free end forward and outboard and tie to ramp tiedown fitting on right side of aircraft. Tie second rope around main body of nose landing gear. Extend free end forward and outboard and tie to ramp tiedown fitting on left side of aircraft. Pull ropes taut when tying and maintain line angles.

b. Tie each main landing gear down using the aft tow lugs and extend the ropes outboard and to the rear, crisscrossing.

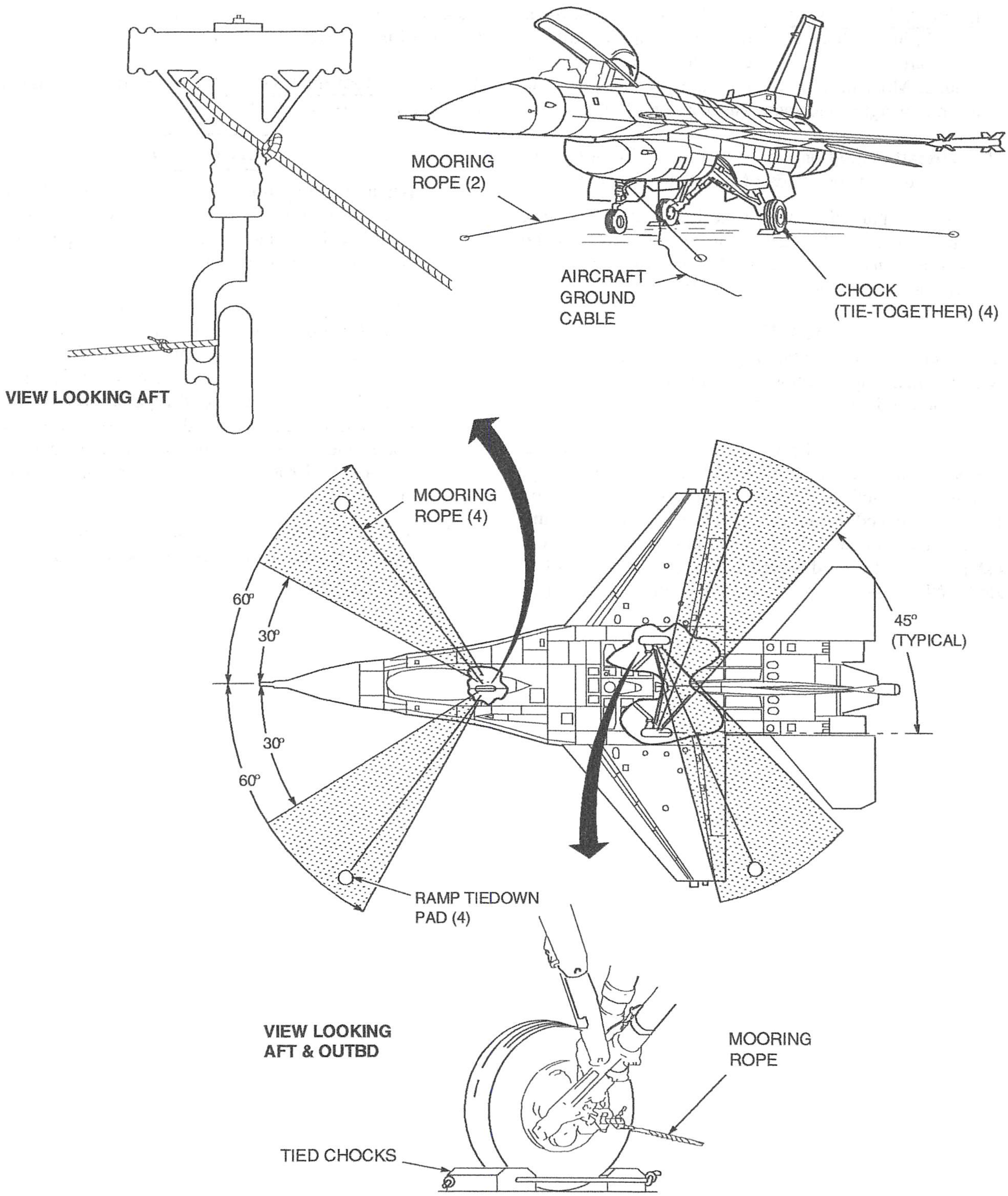

Figure 10-8. Mooring Aircraft.

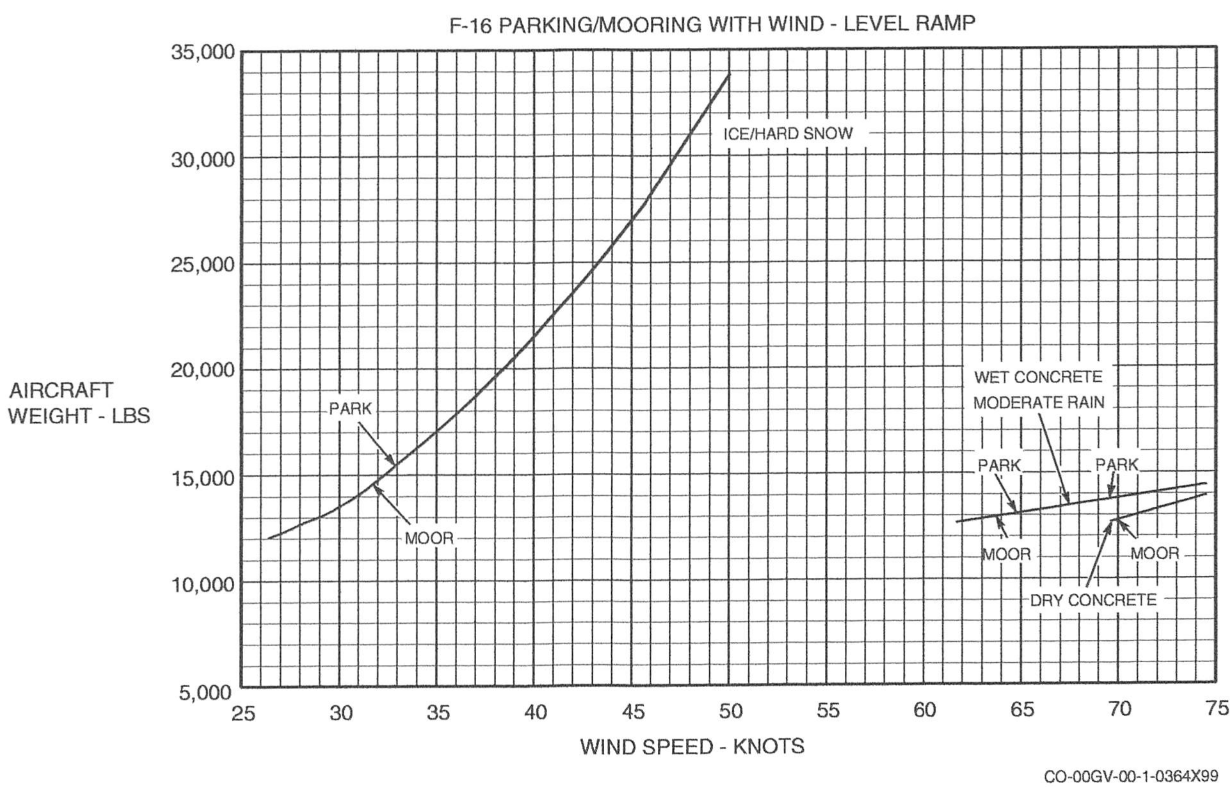

Figure 10-9. Mooring Aircraft for Wind Speed Versus Weight and Surface Conditions.

CHAPTER 11

PLACARDS AND MARKINGS

11.1 INTERNAL MARKINGS AND PLATES.

Markings and plates used for internal instructions and identification are as follows:

DRAWING NUMBER	TITLE
12N1014	PNEUMATIC CHARGE INSTRUCTIONS PLATE
12N102	NATO NITROGEN IDENTIFICATION MARKING
12N2011	FUEL FLOW INSTRUCTIONS MARKING
16N0006	MANUFACTURER'S IDENTIFICATION PLATE
16N0007	RADIO CALL IDENTIFICATION PLATE
16N0008	COMPASS CORRECTION HOLDER IDENTIFICATION PLATE
16N0009	REDUCED IDLE THRUST IDENTIFICATION PLATE
16N0010	MAP AND DATA STOWAGE IDENTIFICATION PLATE
16N0011	RADIO CALL NUMBERS IDENTIFICATION PLATE
16N0012	SAFETY PIN STOWAGE IDENTIFICATION MARKING
B 16N0014	LET DOWN CHART STOWAGE IDENTIFICATION PLATE
B 16N0016	EJECTION MODE SELECT IDENTIFICATION PLATE
16N0017	BUC GROUND TEST IDENTIFICATION PLATE
16N0018	MANUAL CANOPY CONTROL IDENTIFICATION PLATE
16N0019	OXYGEN HOSE STOWAGE IDENTIFICATION PLATE
B 16N0031	RELIEF AND MISC STOWAGE IDENTIFICATION PLATE
16N0032	SEAT ADJUST IDENTIFICATION PLATE

DRAWING NUMBER	TITLE
16N0033	RELIEF CONTAINER STOWAGE IDENTIFICATION PLATE
16N0034	AVTR PANEL IDENTIFICATION PLATE
16N0035	CHAFF/FLARE BUTTON IDENTIFICATION PLATE
16N0037	LOOSE EQUIPMENT STOWAGE IDENTIFICATION PLATE
16N0038	STORES CONFIG IDENTIFICATION PLATE
16N0040	INSTRUMENT RANGE MARKING INSTALLATION
16N0042	SWITCHES RH CONSOLE IDENTIFICATION PLATE
16N0043	WRIST SUPPORT IDENTIFICATION PLATE
16N1500	FUEL SYSTEM IDENTIFICATION PLATES
16N200	SEQUENCE VALVE IDENTIFICATION PLATE
16N2000	HYDRAULIC GROUND TEST DATA INSTRUCTIONS
16N2001	FLIGHT CONTROL ACCUMULATOR CHARGE INSTRUCTIONS PLATE (SAME PLATE USED FOR DRAG CHUTE)
16N2002	JFS ACCUMULATOR CHARGE INSTRUCTIONS PLATE
16N2003	LOW PRESSURE ACCUMULATOR INSTRUCTIONS PLATE
16N2004	HYDRAULIC RESERVOIR FILLING INSTRUCTIONS PLATE
16N2005	EPU PNEUMATIC CHARGE INSTRUCTIONS PLATE
16N2006	CSD ACCUMULATOR LOW PRESSURE INSTRUCTION PLATE

DRAWING NUMBER	TITLE
16N2007	CSD AND JFS ACCUMULATOR IDENTIFICATION MARKING
16N2501	ECS TEST POINTS IDENTIFICATION PLATE
16N2502	DEFOG CONTROL IDENTIFICATION PLATE
16N3000	PITCH/ROLL SWITCH POSITION IDENTIFICATION PLATE
16N3001	ACCELEROMETER/RATE GYRO IDENTIFICATION PLATE
16N3002	POLARITY CHECK INSTRUCTION PLATE
16N3003	FLIGHT CONTROL SYSTEM POWER IDENTIFICATION MARKING
16N3500	CIRCUIT BREAKER IDENTIFICATION PLATE
16N3501	CIRCUIT BREAKER POWER PANEL IDENTIFICATION PLATE
16N3502	LANDING/TAXI LIGHTS SUPPORT INSTRUCTIONS PLATE
16N3503	ALR/46 AMPLIFIER DETECTORS IDENTIFICATION NAMEPLATE
16N3504	ELECTRICAL HARNESS STOWAGE INSTRUCTIONS PLATE
16N3500	REFERENCE DESIGNATOR LANDING GEAR CONTROL IDENTIFICATION PLATE
16N501	HOOK SAFETY PIN INSTRUCTIONS MARKING

11.2 AIRCRAFT EXTERNAL MARKINGS.

Aircraft external markings are located and illustrated in Figure 11-2. Pylon external markings are located and illustrated in Figure 11-3. Fuel tank markings are located and illustrated in Figure 11-4 and Figure 11-5. Aircraft exterior paint scheme is shown in Figure 11-1. Mandatory requirements for standard markings and insignia are found in TO 1-1-8 chapter 9.

11.3 INSTRUMENT RANGE MARKINGS.

Instrument range markings are found on the oil pressure gage, hydraulic pressure gages, tachometer, and FTIT gage. The markings are red and/or green (decalcomania), indicating operational limitations. Ink paste used on the markings conforms to MIL-L-3891, and the decal paper is water-soluble transfer type. Overlay and underlay lacquers used shall not have a degrading effect on the luminescent ink. A decal should free itself from the paper backing within 5 minutes after being wet with tap water. Dimensions and configuration of individual decals are as shown in Figure 11-8.

11.4 MARKING NOSE LANDING GEAR (NLG) SHOCK STRUT ALIGNMENT POINTERS.

The NLG shock strut shall be marked to accomplish nosewheel steering alignment (JG32-51-04, JG32-51-05). Marking should be one coat urethane MIL-C-83286, color No. 17038 (black) per FED-STD-595, in accordance with TO 1-1-8.

a. Jack aircraft (JG07-10-01) to fully extended and center Nose Landing Gear shock strut pistons.

NOTE

Clean and border off the area to be marked using masking tape.

b. Locate and mark alignment pointers on left side of steering collar and bracket assembly using dimensions shown on Figure 11-9.

c. Remove aircraft from jacks (JG07-10-01).

11.5 MARKING THROTTLE IDLE POSITION.

The throttle and adjoining cockpit fairing shown in Figure 11-10 will be marked with reflective tape to identify the idle position. The tape used will be a white or silver, reflective, type II, class III, part number L-S-300 (81348), L-S-300A (81348), or 680-10 (76381).

NOTE

- Insure tape is installed to edge of throttle grip foot where nylon wear button is installed but not in contact with button. This will serve as an alignment mark for throttle position.
- Ⓑ Tape installed on aft throttle quadrant will serve as an alignment mark for throttle position.

a. Position forward throttle to mid-range and install a 1/8-inch wide by 1-inch long piece of reflective tape centered on throttle grip foot.

b. Ⓑ Install a 1/8-inch wide by 1-inch long piece of reflective tape on aft throttle lever.

c. Position forward throttle to idle and install a 1/8-inch wide by 1-inch long piece of reflective tape on cockpit side fairing to align with marking on throttle grip foot.

d. Ⓑ Position forward throttle to idle and install a 1/8-inch wide by 1-inch long piece of reflective tape on console by aft throttle to align with mark on throttle.

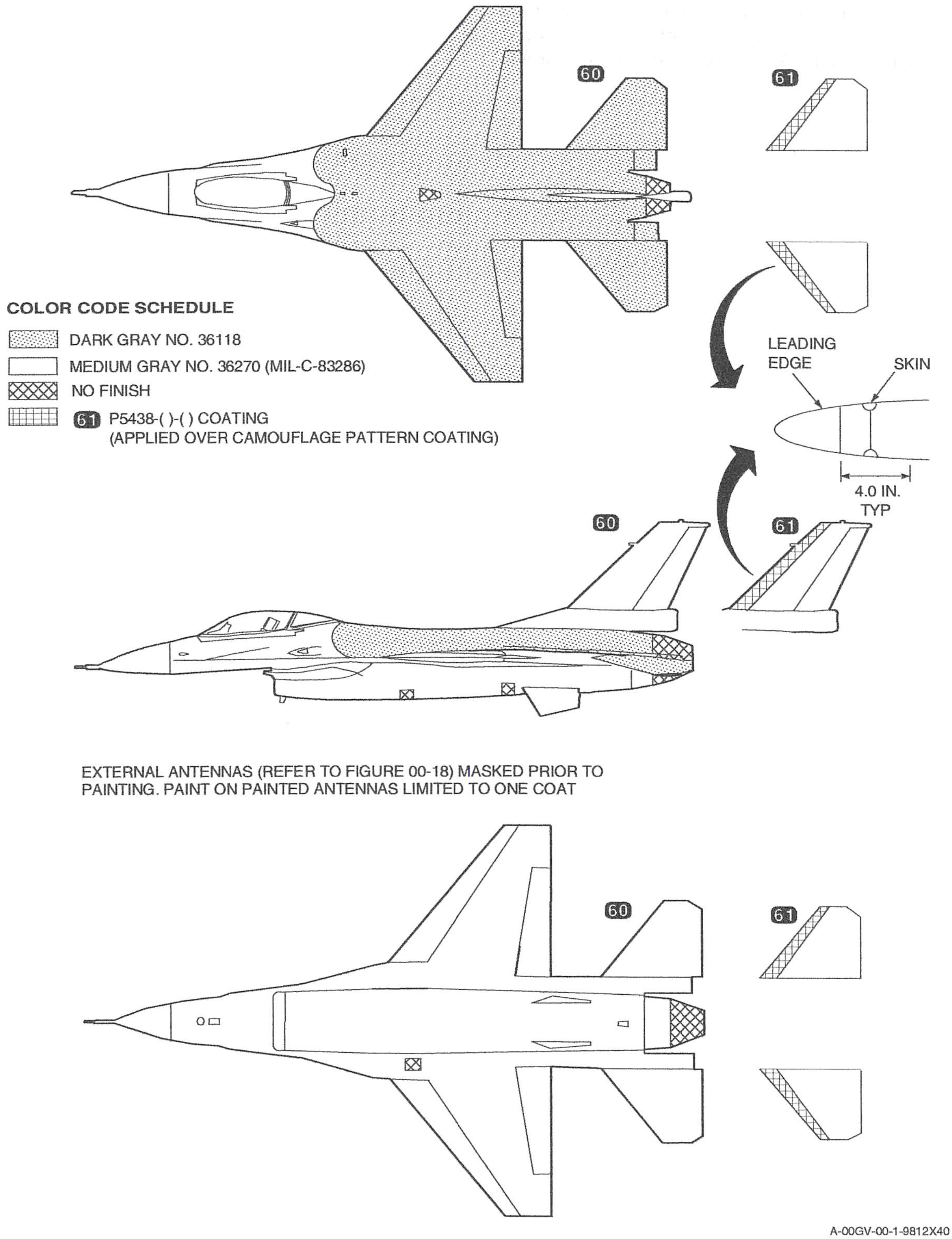

Figure 11-1. Aircraft Exterior Paint Scheme.

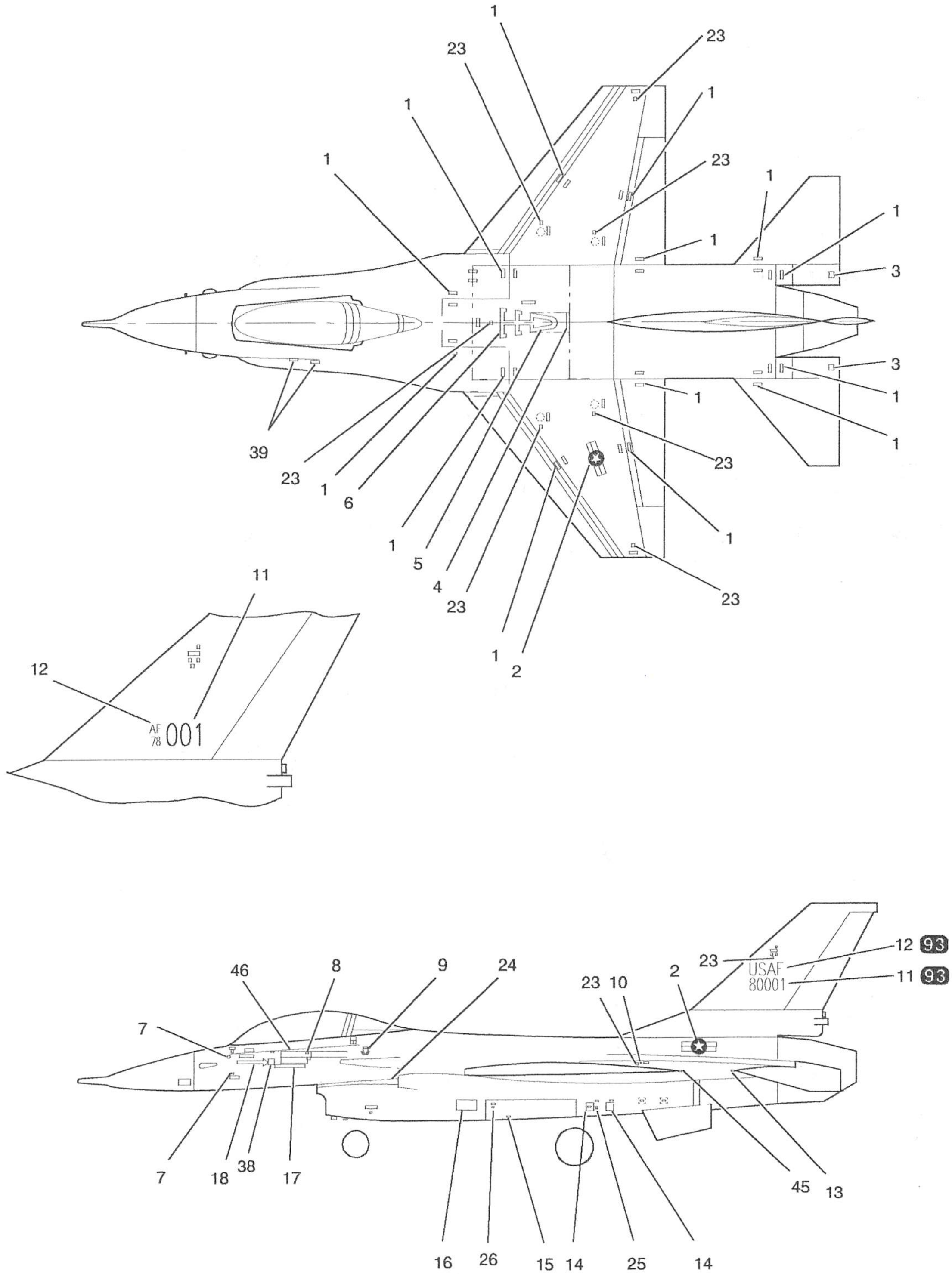

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Figure 11-2. Aircraft External Markings. (Sheet 1 of 30)

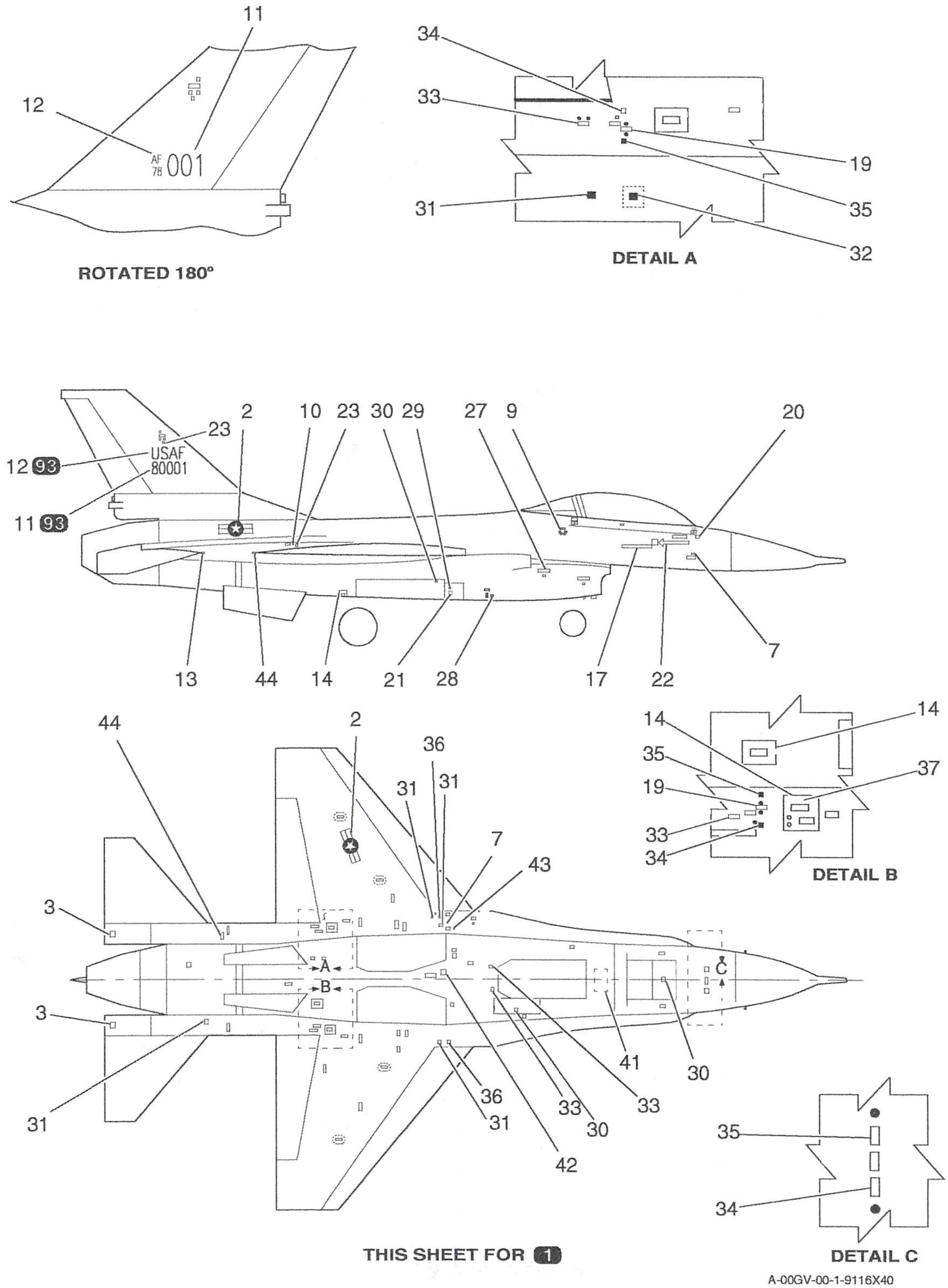


Figure 11-2. Aircraft External Markings. (Sheet 2)

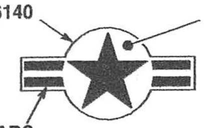
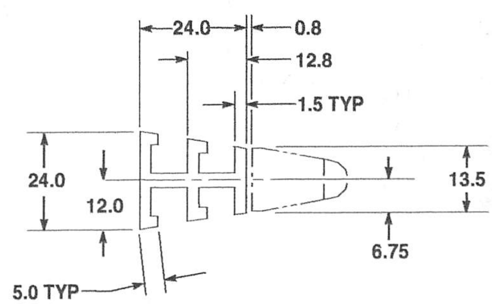
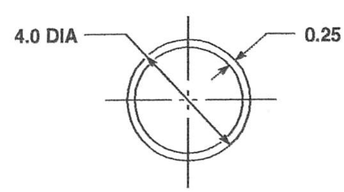
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
1	GRAY 36231	3/4-INCH	NO STEP ← OUTBOARD WALKWAY — INBOARD
2			10 IN. DIA STAR PER MIL-I-6140 UPPER SURFACE 36270 GRAY  LOWER SURFACE 36118 GRAY COLOR OF STAR AND BARS TO BE SAME AS AIRCRAFT COLOR
3		1/2-INCH	UPPER SURFACE 36270 GRAY WARNING FAST ACTING SPEED BRAKES LOWER SURFACE 36118 GRAY
4	GRAY 36270		1-INCH LINE AS SHOWN
5	GRAY 36270		1-INCH LINE TO FOLLOW OUTLINE AS SHOWN
6	GRAY 36270		
7	GRAY 36270		

Figure 11-2. Aircraft External Markings. (Sheet 3)

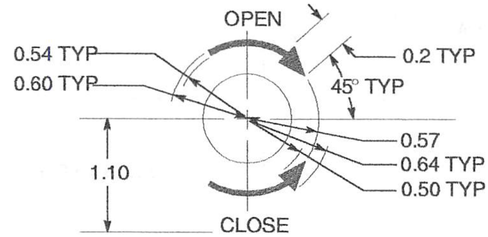
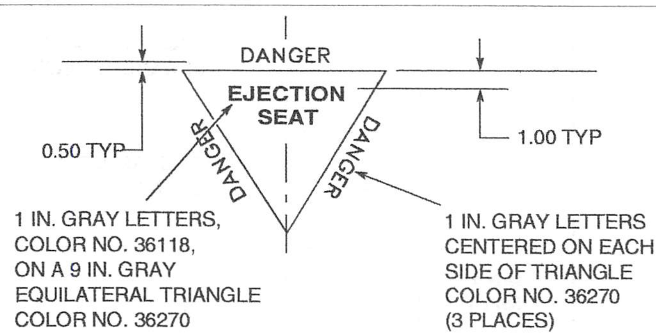
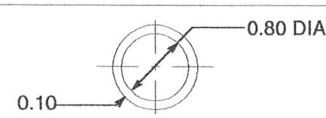
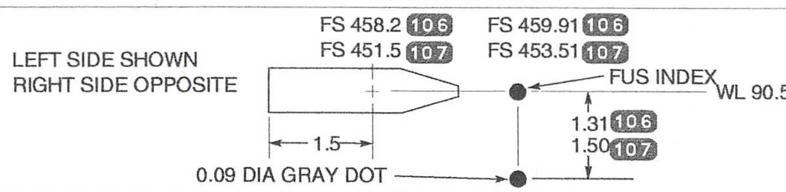
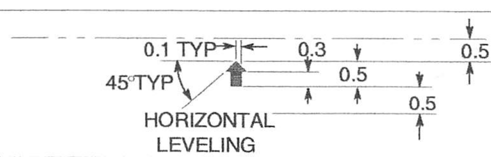
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
8	GRAY 36118	1/4-INCH	
9	AS SHOWN	1-INCH	
10	GRAY 36118		
11 84	GRAY 36118	6-INCH	AIRCRAFT SERIAL NUMBER IN VERTICAL BLOCK LETTERS IN ACCORDANCE WITH TO 1-1-8
11 85	GRAY 36118	12-INCH	AIRCRAFT SERIAL NUMBER IN VERTICAL BLOCK LETTERS IN ACCORDANCE WITH TO 1-1-8
12 84	GRAY 36118	6-INCH	USAF IN VERTICAL BLOCK LETTERS IN ACCORDANCE WITH TO 1-1-8
12 85	GRAY 36118	5-INCH	AF AND YEAR GROUP IN VERTICAL BLOCK LETTERS IN ACCORDANCE WITH TO 1-1-8
13	GRAY 36118		
14	GRAY 36118		1/2-INCH LINE AROUND DOOR
15	GRAY 36118	1/4-INCH	

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Figure 11-2. Aircraft External Markings. (Sheet 4)

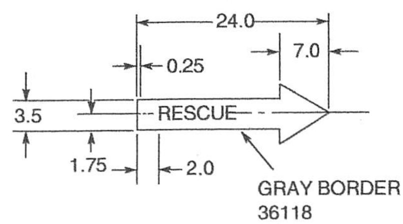
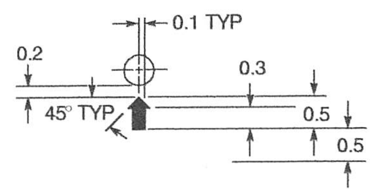
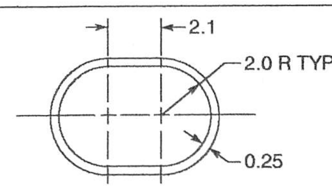
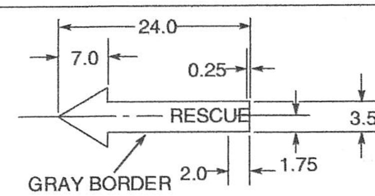
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
DELETED 16			
17	GRAY 36118	1-INCH	1. PUSH BUTTON TO OPEN DOOR 2. PULL RING OUT 6 FEET TO JETTISON CANOPY
18	GRAY 36118 LETTERS	2-INCH	
19	GRAY 36118		
20	GRAY 36118		
21	BLACK 37038	1/4-INCH	OXYGEN SYSTEM CAUTION KEEP CLEAN, DRY AND FREE FROM OIL
22	GRAY 36118 LETTERS	2-INCH	

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Figure 11-2. Aircraft External Markings. (Sheet 5)

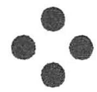
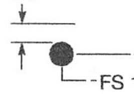
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
23	GRAY 36118		
24	GRAY 36118		 OUTSIDE DOOR A 2105 B 2107
25	GRAY 36118		1.0 X 10.0 INCH LINE
26	GRAY 36118		
27	GRAY 36118		1-INCH DIA. GRAY BORDER AROUND HOLE  0.5 WL 71.10 FS 199.00
28	GRAY 36118	1/4-INCH	E 115/200V. 400 CYCLE
29	GRAY 36118		
30	GRAY 36118		
31	GRAY 36118		
32	GRAY 36118	1/4-INCH	 0-148
33	GRAY 36118		
34	GRAY 36118		

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Figure 11-2. Aircraft External Markings. (Sheet 6)

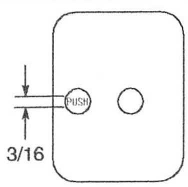
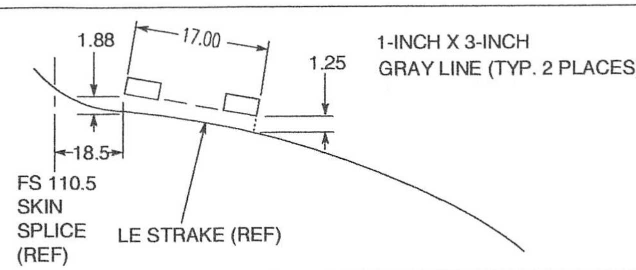
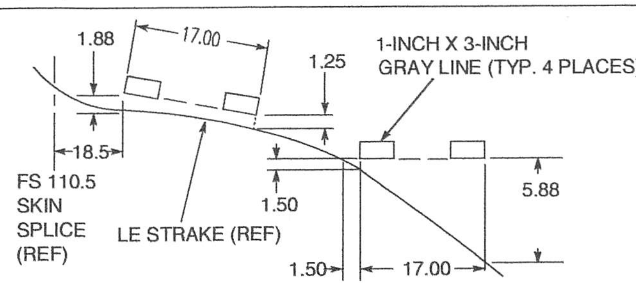
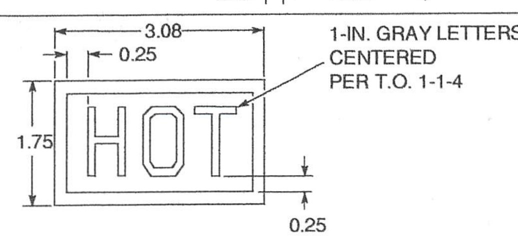
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
35	GRAY 36118		
36	GRAY 36118	1/4-INCH	
37	GRAY 36118	1/4-INCH	
38	GRAY 36118	3/16-INCH	
39 A	GRAY 36118		
40 B	GRAY 36118		
41	GRAY 36118		

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Figure 11-2. Aircraft External Markings. (Sheet 7)

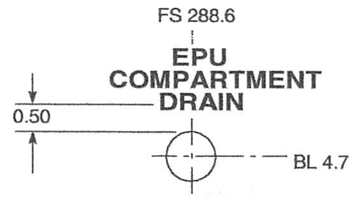
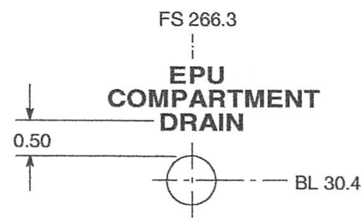
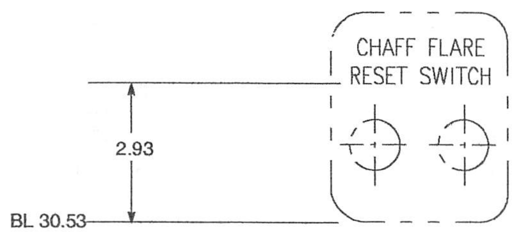
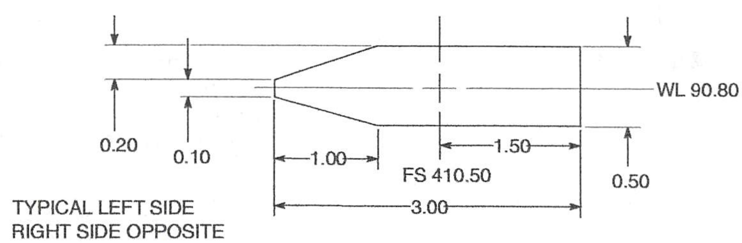
INDEX NO. 1	COLOR	SIZE LETTERS	MARKING
42	GRAY 36118	1/4-INCH	
43	GRAY 36118	1/4-INCH	
44	GRAY 36118	1/4-INCH	
45	GRAY 36118		
46	GRAY 36118		1/2 INCH X 1 INCH LINE A FS 138.5 B FS 200.5

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Figure 11-2. Aircraft External Markings. (Sheet 8)

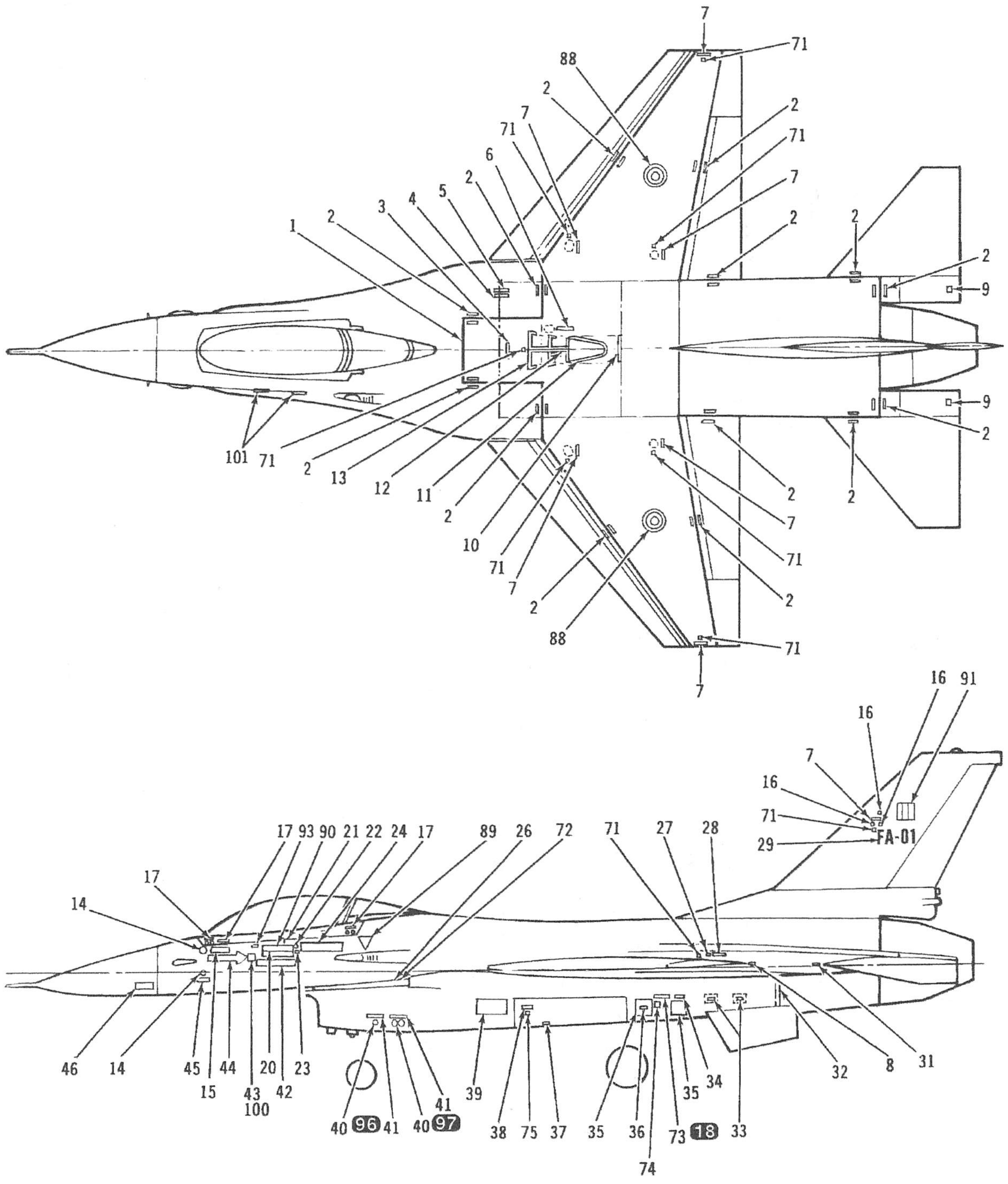

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Figure 11-2. Aircraft External Markings. (Sheet 9)

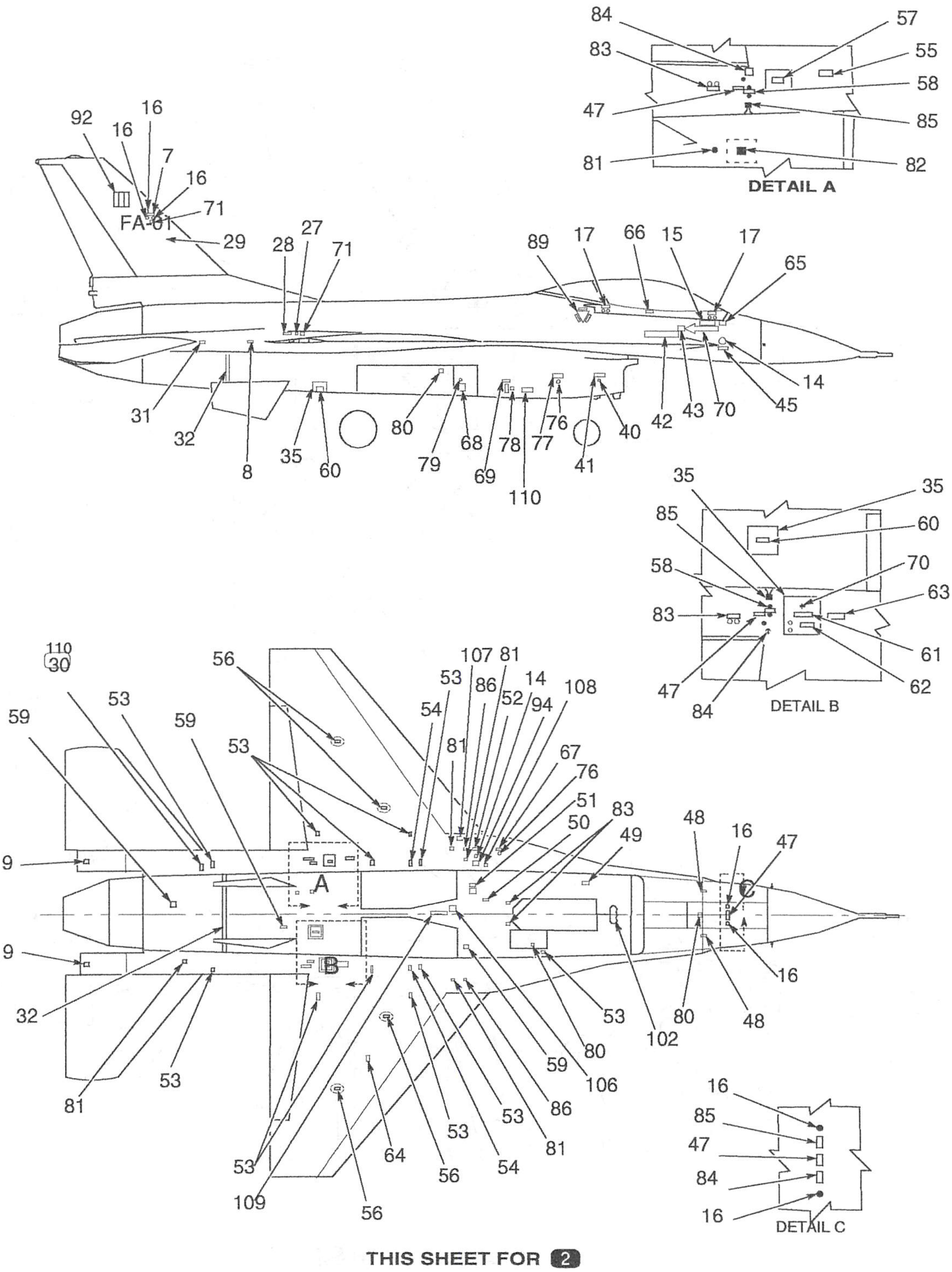
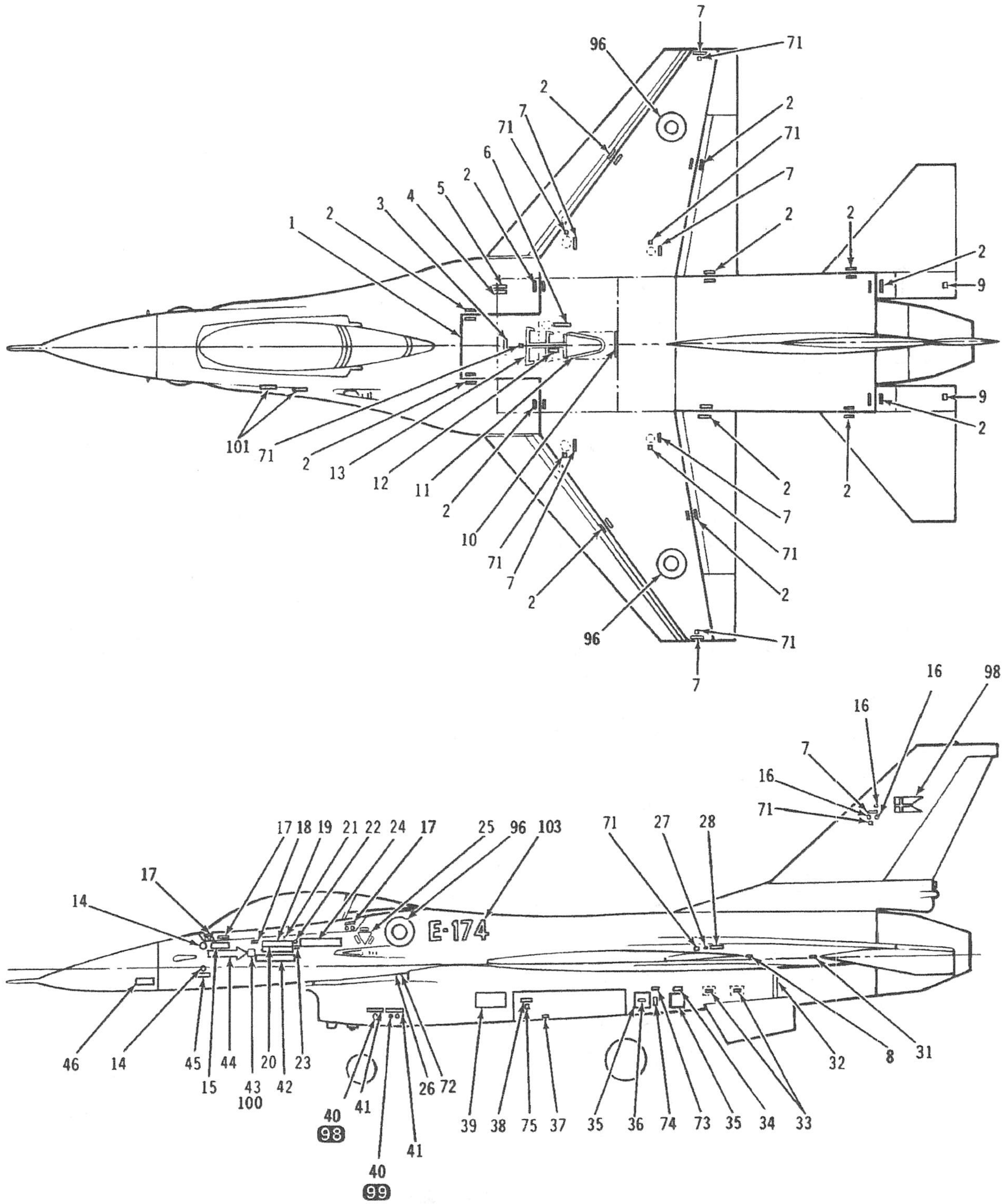


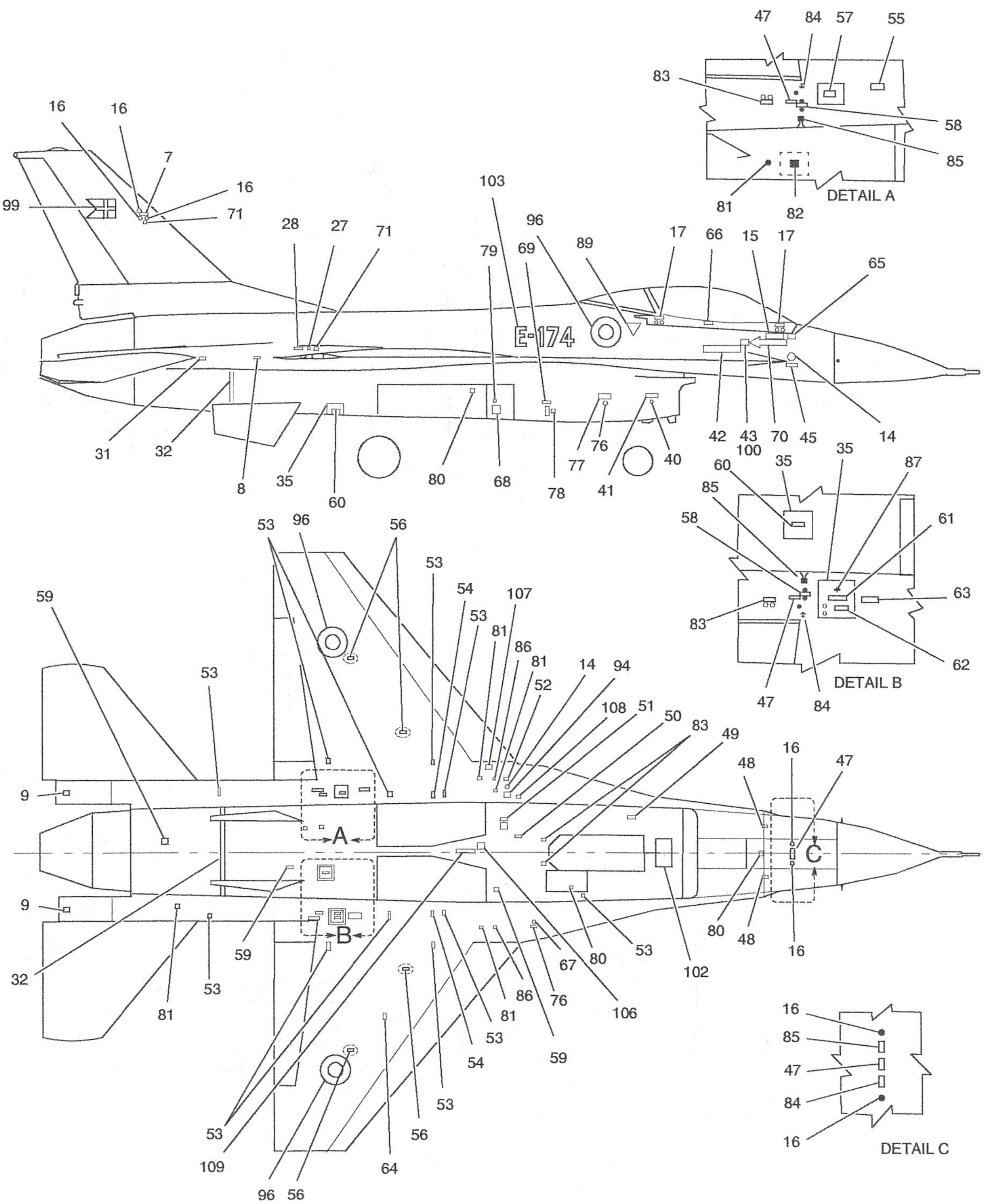
Figure 11-2. Aircraft External Markings. (Sheet 10)



THIS SHEET FOR 3

A-00GV-00-1-0105X40

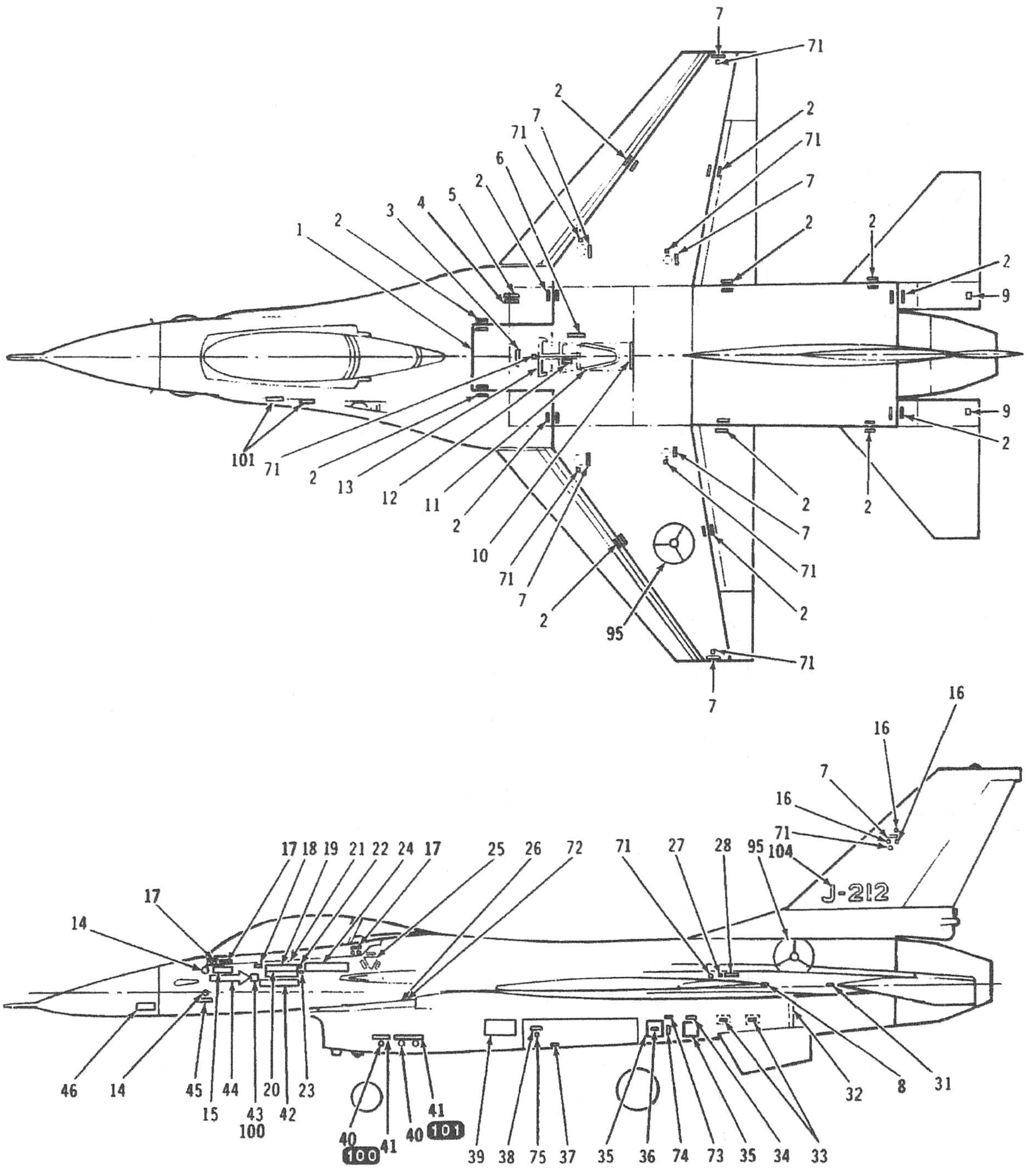
Figure 11-2. Aircraft External Markings. (Sheet 11)



THIS SHEET FOR 3

A-00GV-00-1-0106X40

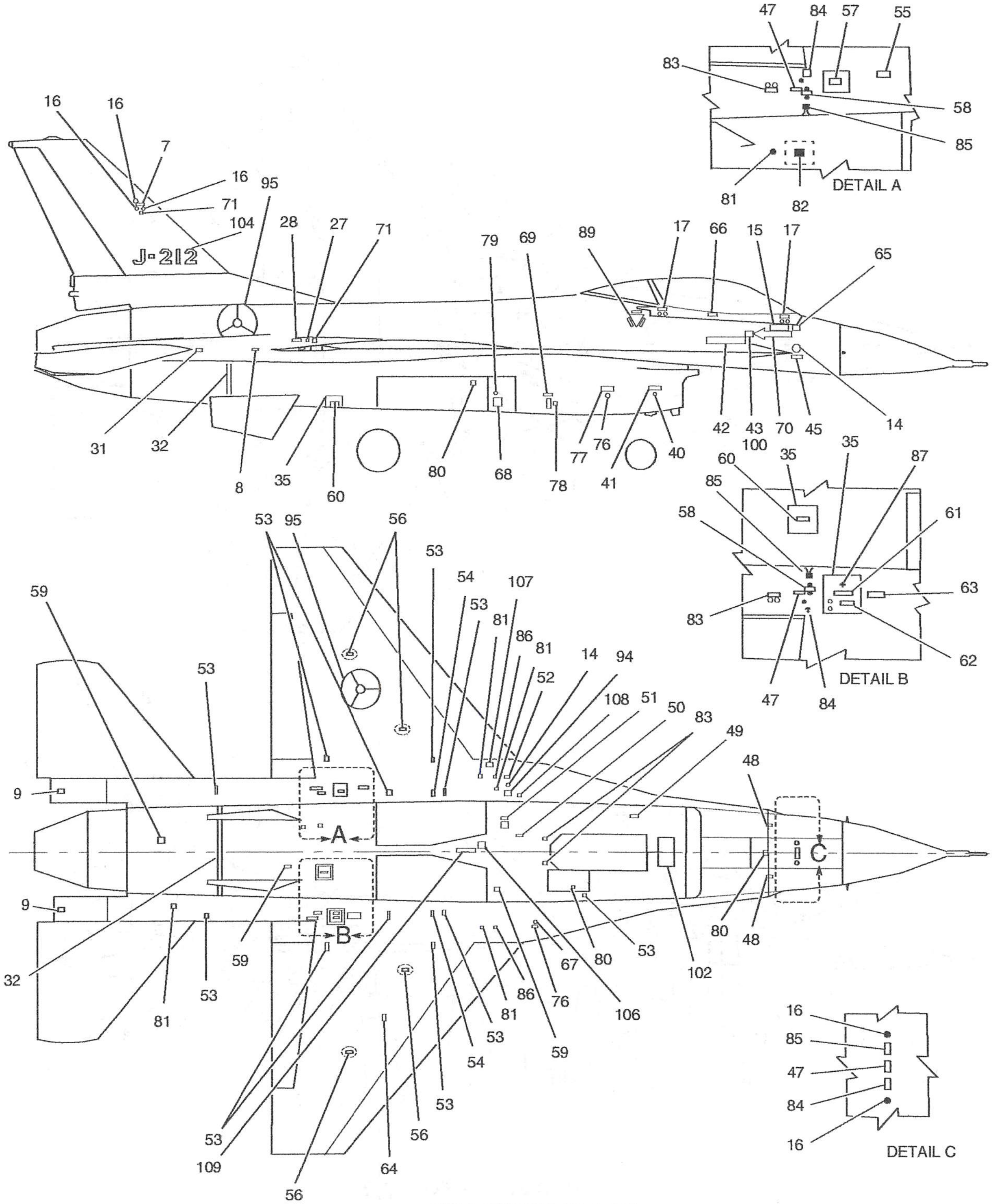
Figure 11-2. Aircraft External Markings. (Sheet 12)



THIS SHEET FOR 4

A-00GV-00-1-0107X40

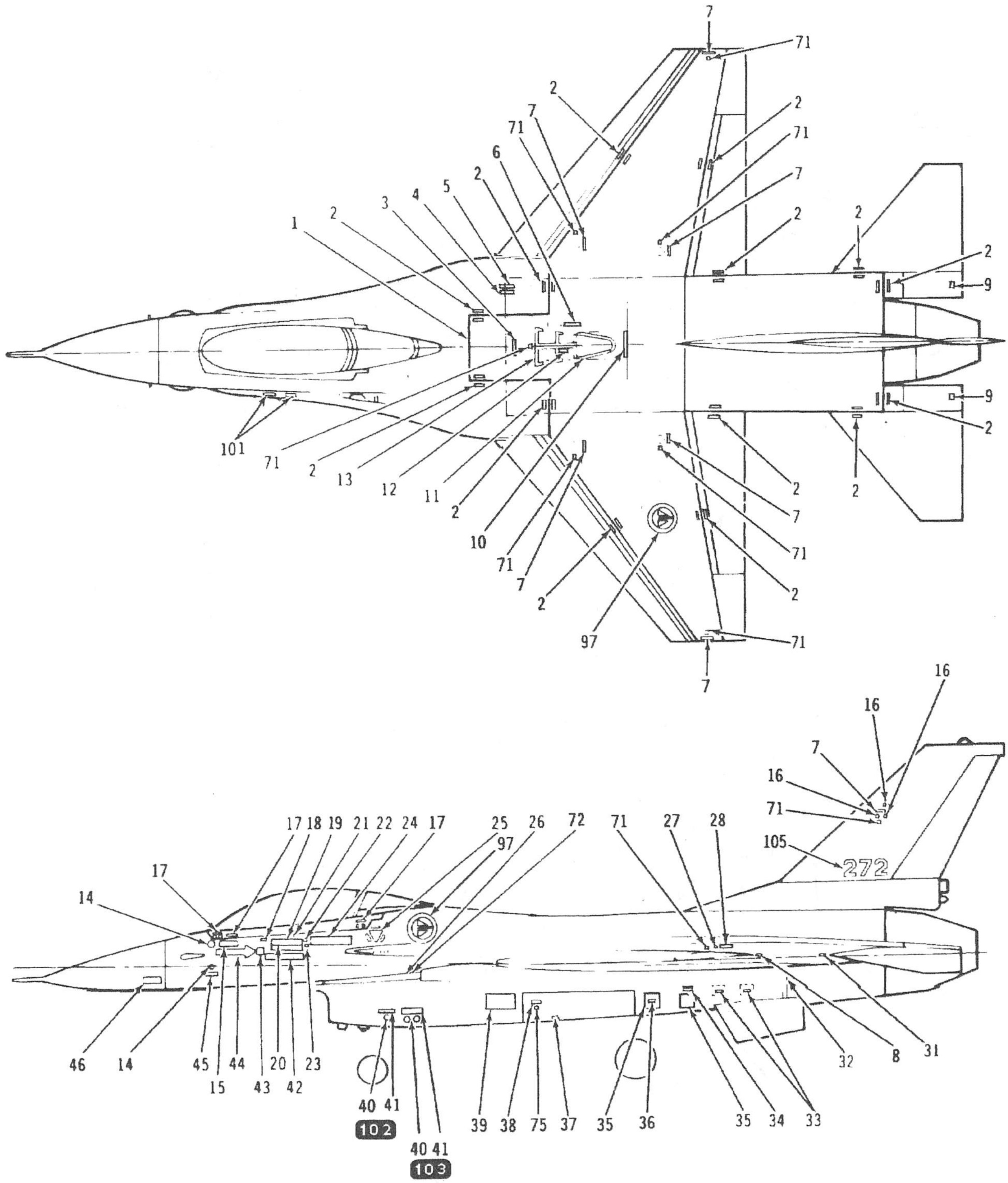
Figure 11-2. Aircraft External Markings. (Sheet 13)



THIS SHEET FOR 4

A-00GV-00-1-0108X40

Figure 11-2. Aircraft External Markings. (Sheet 14)



THIS SHEET FOR 5

Figure 11-2. Aircraft External Markings. (Sheet 15)

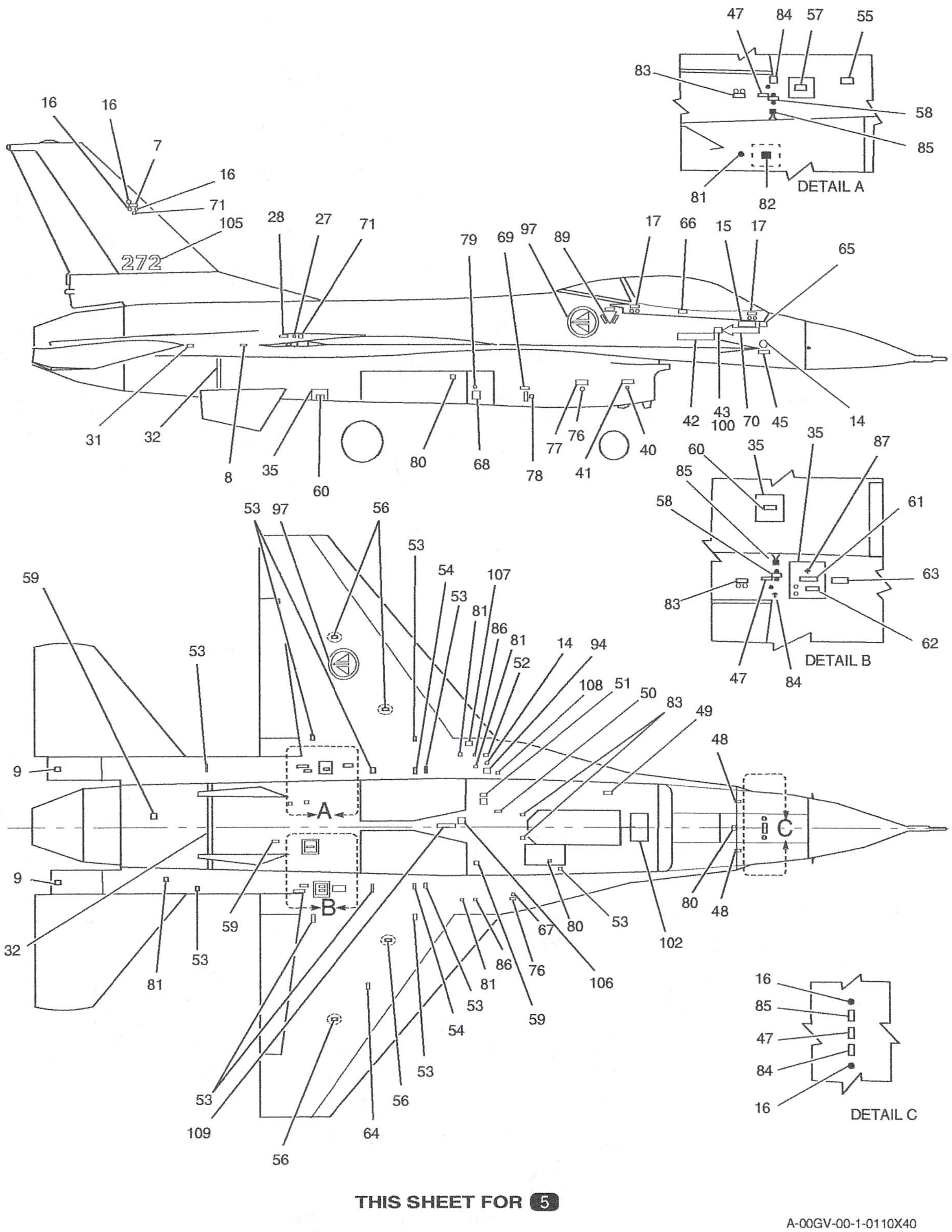
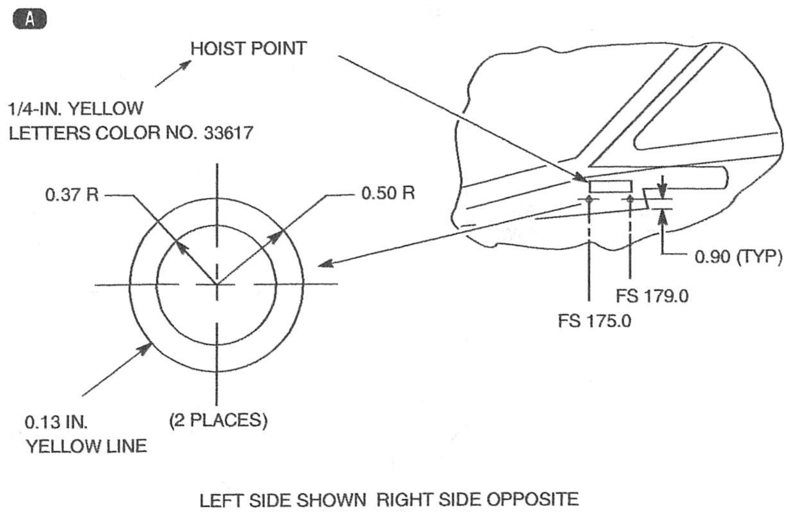
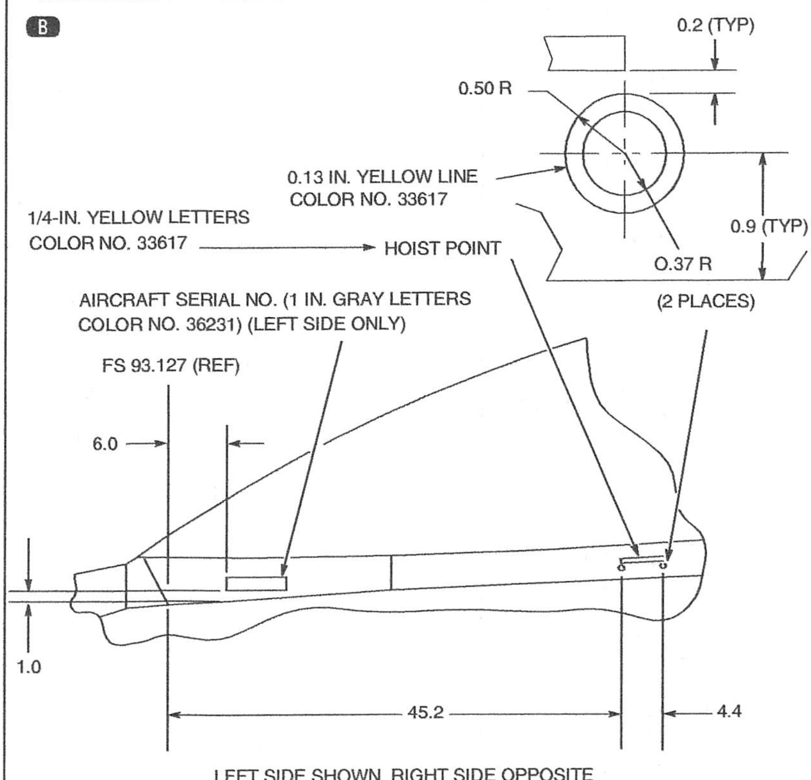


Figure 11-2. Aircraft External Markings. (Sheet 16)

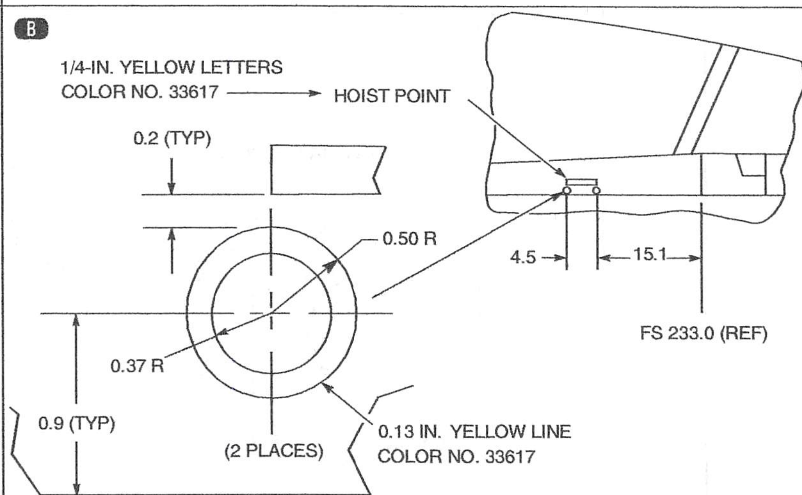
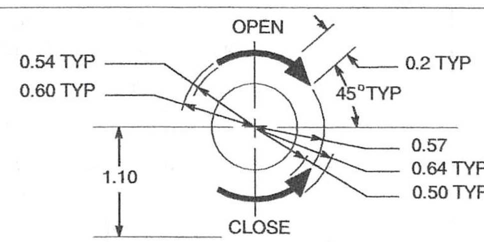
<table>
<tr><th>INDEX NUMBER 6</th><th>COLOR</th><th>SIZE LETTERS</th><th>MARKING</th></tr>
<tr><td>17</td><td>AS SHOWN</td><td>AS SHOWN</td><td>




</td></tr>
</table>

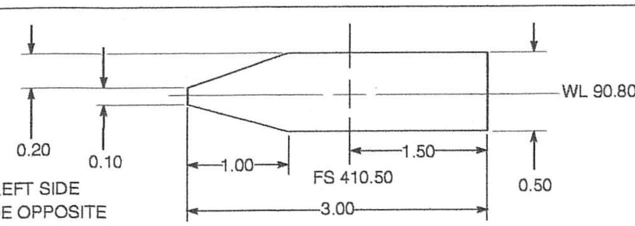
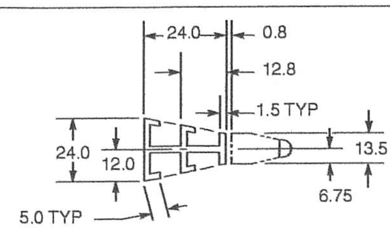
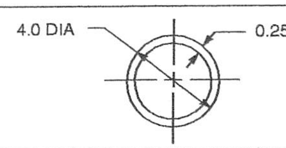
A-00GV-00-1-0113X40

Figure 11-2. Aircraft External Markings. (Sheet 19)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
17	AS SHOWN	AS SHOWN	 LEFT SIDE SHOWN RIGHT SIDE OPPOSITE
18	YELLOW 33617	1/4 -INCH	CANOPY LOCK SAFETY ACCESS
19	GRAY 36118	1 INCH	US AIR FORCE F-16A AF SERIAL NO. [A] AIRCRAFT SERIAL NUMBER
20	GRAY 36118	1 INCH	SERVICE THIS AIRCRAFT WITH GRADE JP-4 FUEL PER MIL-T-5624
21	YELLOW 33617		1/2 -INCH x 1 INCH LINE FS 138.5 B FS 200.5
22	YELLOW 33617	1/4 -INCH	
23	YELLOW 33617	1/4 -INCH	MANUAL CANOPY
24	YELLOW 33617 LETTERS GRAY 36118 BACK-GROUND	1 INCH	WARNING: THIS AIRCRAFT CONTAINS A CANOPY REMOVER CONTAINING AN EXPLOSIVE CHARGE

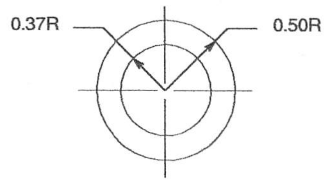
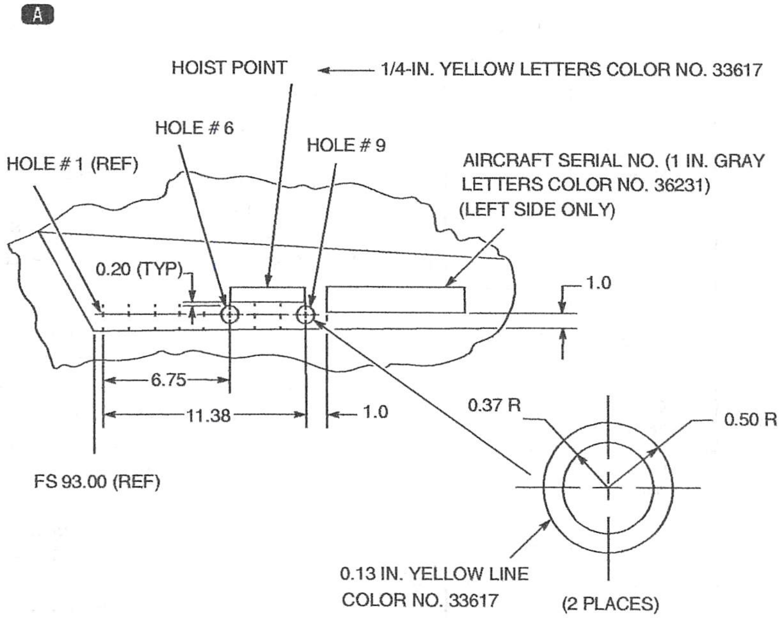
A-00GV-00-1-0114X40

Figure 11-2. Aircraft External Markings. (Sheet 20)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
1	GRAY 36231		1/2-INCH LINE TO FOLLOW OUTLINE AS SHOWN
2	GRAY 36231	3/4-INCH	NO STEP ← OUTBOARD ← 1/2-INCH LINE (SEE INDEX NO. 1) WALKWAY ← INBOARD
3	YELLOW 33617	1/4-INCH	A/C HOIST ACCESS
4	ORANGE 32356	1/2-INCH	EPU TURBINE
5	ORANGE 32356		1-INCH X 12-INCH LINE
6	GRAY 36231	1/2-INCH	FUEL TANK NEGATIVE PRESSURE RELIEF VALVE
7	YELLOW 33617	1/4-INCH	HOIST POINT
8	ORANGE 32356		 TYPICAL LEFT SIDE RIGHT SIDE OPPOSITE
9	ORANGE 32356	1/2-INCH	WARNING FAST ACTING SPEED BRAKES
10	GRAY 36231		1-INCH LINE AS SHOWN
11	GRAY 36231		1-INCH LINE TO FOLLOW OUTLINE AS SHOWN
12	YELLOW 33617	1/4-INCH	FUEL TANK MANUAL DEPRESS VALVE
13	GRAY 36231		
14	ORANGE 32356		

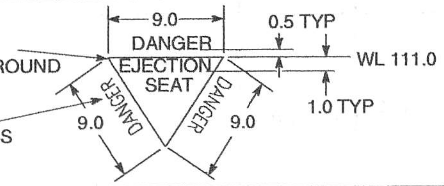
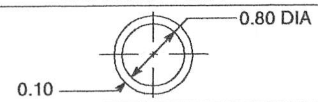
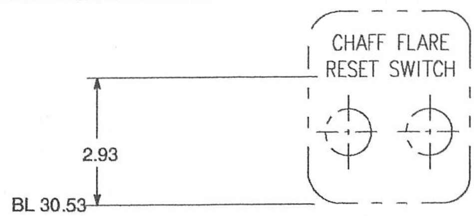
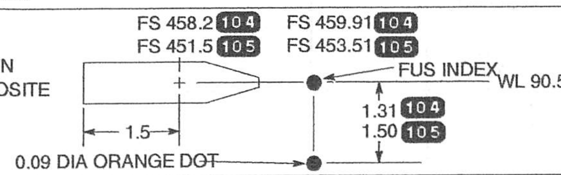
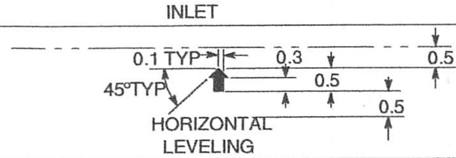
A-00GV-00-1-0111X40

Figure 11-2. Aircraft External Markings. (Sheet 17)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
15	GRAY 36118	1/2-INCH	AMBIENT SENSING PORT CABIN PRESSURE REGULATOR DO NOT PLUG OR DEFORM HOLES KEEP SMOOTH AND CLEAN WITHIN CIRCLE
16	YELLOW 33617		
17	AS SHOWN	AS SHOWN	 LEFT SIDE SHOWN RIGHT SIDE OPPOSITE

A-00GV-00-1-0112X40

Figure 11-2. Aircraft External Markings. (Sheet 18)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
25	AS SHOWN	1-INCH	
26	YELLOW 33617 BLACK 37038	AS SHOWN	1/4-INCH GRAY LETTERS → CANOPY SWT & ECS ACCESS ← OUTSIDE DOOR A 2105 B 2107 1/4-INCH GRAY LETTERS → COLD AIR CART. SERVO AIR & ECS TEST CONN ← INSIDE DOOR A 2105 B 2107 3/16-INCH BLACK LETTERS → CAUTION YELLOW BACKGROUND 33538 → PLACE COCKPIT CANOPY SWT IN "OFF" BEFORE OPERATING EXT CANOPY SWT ← ON INSIDE OF DOOR A 2105 B 2107
27	ORANGE 32356		
28	YELLOW 33617	1/4-INCH	A/C HOIST
29 2	GRAY 36118	6-INCH	AIRCRAFT SERIAL NUMBER IN VERTICAL BLOCK LETTERS IN ACCORDANCE WITH TO 1-1-8
30 113	GRAY 36118	1/4-INCH	
31	ORANGE 32356		
32	ORANGE 32356		2-INCH LINE AROUND LOWER PERIPHERY EXCLUDING STRAKES AND VENTRAL FINS
33	YELLOW 33617	1/4-INCH	REMOVE FASTENERS PRIOR TO REMOVING VENTRAL
34	ORANGE 32356	1/2-INCH	JFS EXHAUST
35	ORANGE 32356		1/2-INCH LINE AROUND DOOR
36	ORANGE 32356	1/2-INCH	JFS INLET
37	BLACK 37038	1/4-INCH	

A-00GV-00-1-9742X40

Figure 11-2. Aircraft External Markings. (Sheet 21)

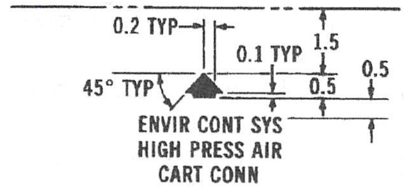
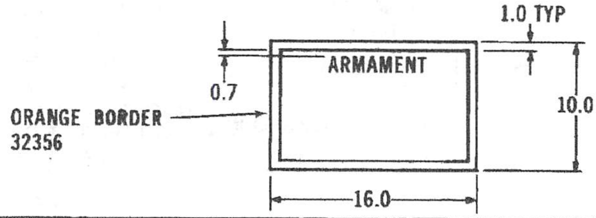
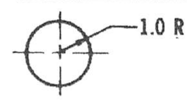
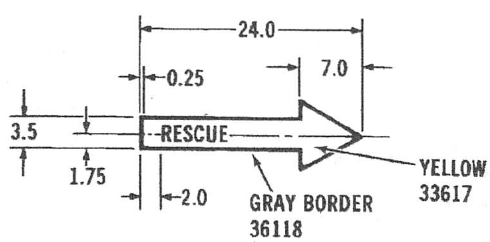
INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
38	BLACK 37038	1/4 -INCH	
39	ORANGE 32356 LETTERS	1 INCH	
40	GRAY 36118		
41	GRAY 36118	1/2-INCH	FUEL VENT VALVE AMBIENT SENSE PORT KEEP CLEAR
42	YELLOW 33617 LETTERS GRAY 36118 BACK-GROUND	1 INCH	1. PUSH BUTTON TO OPEN DOOR 2. PULL RING OUT 6 FEET TO JETTISON CANOPY
43	YELLOW 33617		ENTIRE DOOR
44	GRAY 36118 LETTERS	2 INCH	
45	GRAY 36118	1/2-INCH	STATIC PRESSURE DO NOT PLUG OR DEFORM HOLES
46	GRAY 36118	1/2-INCH	CAUTION RADAR ANTENNA MUST BE IN STOWED POSITION TO OPEN/CLOSE RADOME. POSITION: UP & LEFT

Figure 11-2. Aircraft External Markings. (Sheet 22)

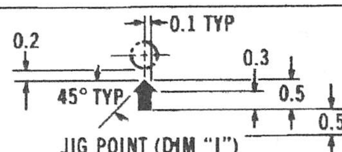
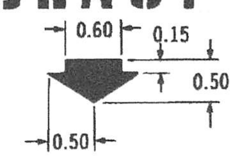
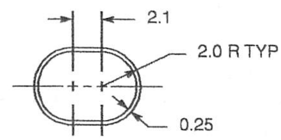
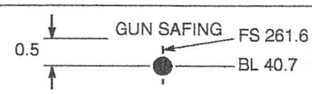
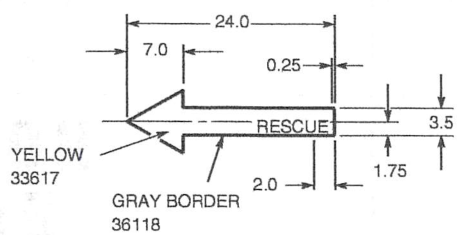
INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
47	YELLOW 33617	1/4 -INCH	MOORING & JACK POINT
48	GRAY 36118	1/4 -INCH	COCKPIT DRAIN PUSH
49	YELLOW 33617	1/4 -INCH	BAY F-1 FUEL CELL CAVITY VENT
50	ORANGE 32356	1/2-INCH	CAUTION LIQUID OXYGEN VENT
51	YELLOW 33617	1/4 -INCH	FUEL PUMP ADVISORY LTS
52	ORANGE 32356	1/2-INCH	EPU EXHAUST
53	YELLOW 33617	1/4 -INCH	FUEL TANK WATER DRAIN
54	YELLOW 33617	1/4 -INCH	AIR REFUEL CAVITY DRAIN
55	YELLOW 33617	1/4 -INCH	FFP SEAL CAVITY DRAIN
56	GRAY 36118	1/4 -INCH	FOR LATCHES MAX (1) TURN IN EITHER DIRECTION MAX TORQUE 40 IN-LBS
57	ORANGE 32356	1/4 -INCH	DEFUEL ADAPTER
58	YELLOW 33617	1/4 -INCH	 JIG POINT (DIM "I") FS 374.30
59	ORANGE 32356	1/2-INCH	HOT AIR BLAST 

Figure 11-2. Aircraft External Markings. (Sheet 23)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
60	ORANGE 32356	1/2-INCH	FIRE ACCESS
61	ORANGE 32356	1/4-INCH	TANK CAPACITY B 890 US GAL / TANK CAPACITY A 1072 US GAL
62	ORANGE 32356	1/4-INCH	PRESSURE REFUEL ADAPTER
63	ORANGE 32356	1/2-INCH	SERVICE WITH GRADE JP4 FUEL PER MIL-T-5624
64	YELLOW 33617	1/4-INCH	FUEL TANK VENT
65	ORANGE 32356		
66	YELLOW 33617	1/4-INCH	CAUTION CLEAN OUTER SURFACE OF TRANSPARENCIES WITH ISOPROPHYL ALCOHOL AND WATER OR MILD SOAP AND WATER ONLY. CLEAN INNER SURFACE WITH WATER OR MILD SOAP AND WATER ONLY. USE CLEAN KAY DRY TOWELS. SEE JOB GUIDE WHEN AMBIENT TEMPERATURES ARE ABOVE 90° F.
67	ORANGE 32356	1/2-INCH	
68	BLACK 37038	1/4-INCH	OXYGEN SYSTEM CAUTION KEEP CLEAN, DRY, AND FREE FROM OIL
69	GRAY 36118	1/4-INCH	EXT PWR CONN
70	GRAY 36118 LETTERS	2 INCH	

A-00GV-00-1-0188X40

Figure 11-2. Aircraft External Markings. (Sheet 24)

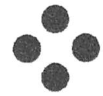
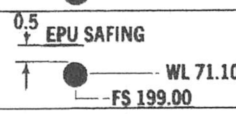
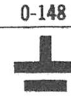
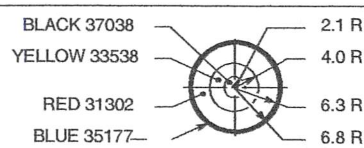
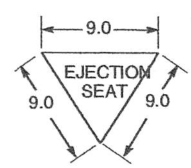
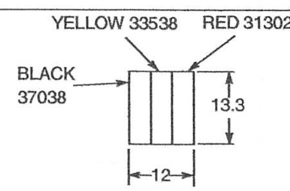
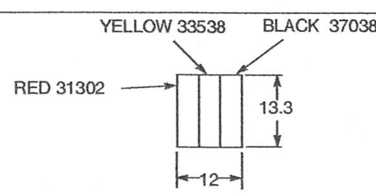
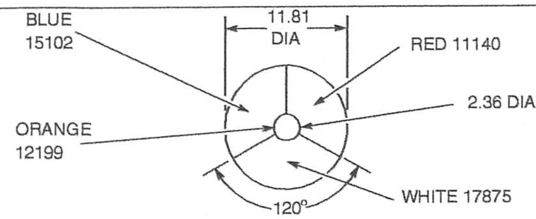
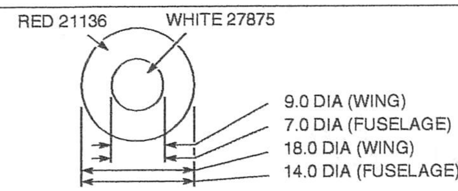
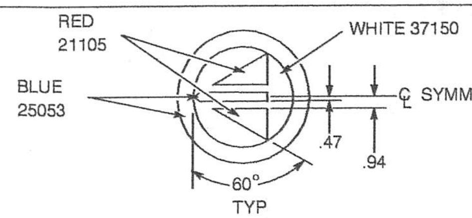
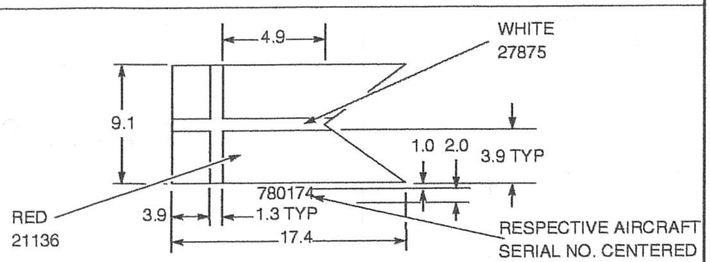
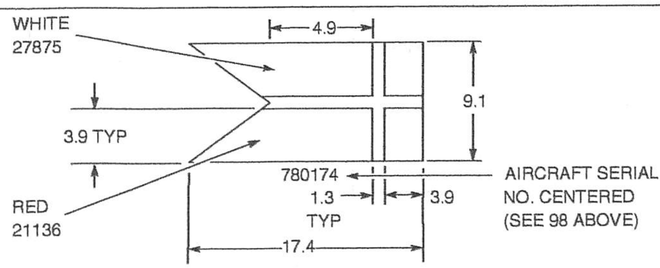
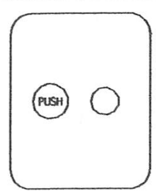
INDEX NUMBER 6	COLOR	SIZE LETTER	MARKING
71	YELLOW 33617		 UP OR FORWARD ↑
72	GRAY 36118		 OUTSIDE DOOR A 2105 B 2107
73	ORANGE 32356	1/2-INCH	JFS TURBINE
74	ORANGE 32356		1.0 x 10.0 INCH LINE
75	GRAY 36118		
76	ORANGE 32356		
77	ORANGE 32356	1/2-INCH	1 INCH DIA. ORANGE BORDER AROUND HOLE 
78	GRAY 36118	1/4-INCH	 SERVICING STARTING ETC 115/200V, 400 CYCLE
79	GRAY 36118	1/4-INCH	 LIQUID 5 LITRES
80	GRAY 36118		
81	GRAY 36118		
82	GRAY 36118	1/4-INCH	 0-148
83	GRAY 36118	1/4-INCH	 GROUND (EARTH) HERE
84	YELLOW 33617		

Figure 11-2. Aircraft External Markings. (Sheet 25)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
85	YELLOW 33617		
86	GRAY 36118	1/4-INCH	 H-515
87	GRAY 36118	1/4-INCH	 F-40
88 2	AS SHOWN		
89 2	GRAY 36118 LETTERS ORANGE 32356 BACK-GROUND	1-INCH	
90 2	GRAY 36118	1-INCH	AIRCRAFT SERIAL NUMBER
91 2	AS SHOWN		 (3 EQUAL PARTS)
92 2	AS SHOWN		 (3 EQUAL PARTS)
93	YELLOW 33617	1/4-INCH	CANOPY HANDLE SAFETY ACCESS
94	GRAY 36231	1/4-INCH	HYDRAZINE DETECTOR

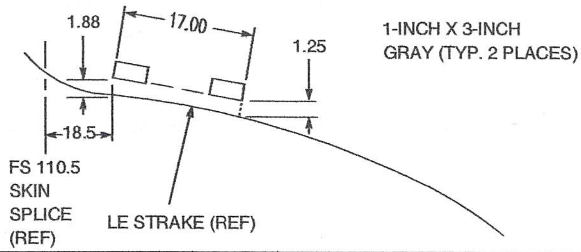
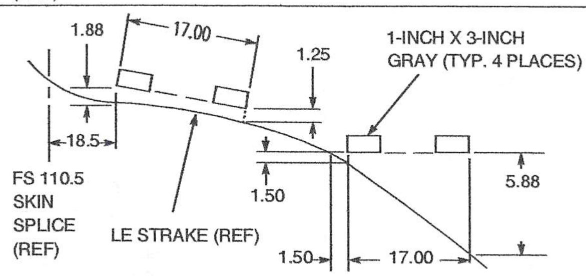
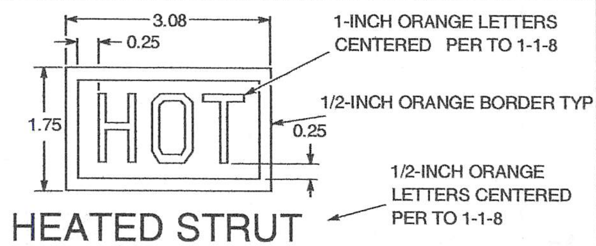
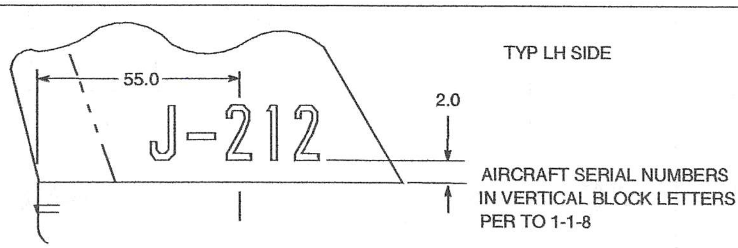
A-00GV-00-1-0120X40

Figure 11-2. Aircraft External Markings. (Sheet 26)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
95 4	AS SHOWN		
96 3	AS SHOWN		
97 5	AS SHOWN		
98 3	AS SHOWN		
99 3	AS SHOWN		
100	GRAY 36118	3/16-INCH	

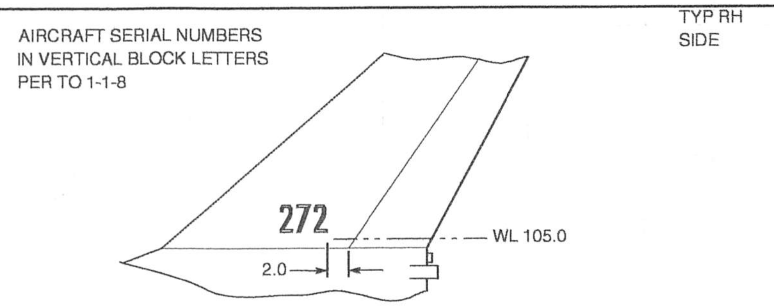
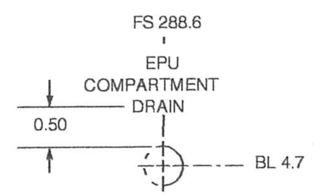
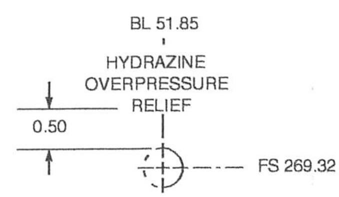
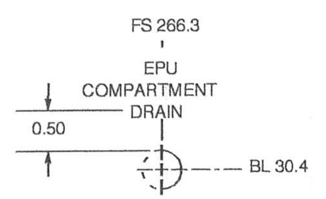
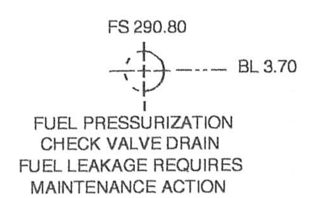
A-00GV-00-1-0121X40

Figure 11-2. Aircraft External Markings. (Sheet 27)

<table>
<tr><th>INDEX NUMBER 6</th><th>COLOR</th><th>SIZE LETTERS</th><th>MARKING</th></tr>
<tr><td>101 A</td><td>GRAY
36118</td><td></td><td></td></tr>
<tr><td>101 B</td><td>GRAY
36118 2
4 5
26132 3</td><td></td><td></td></tr>
<tr><td>102</td><td>ORANGE
32356</td><td>AS SHOWN</td><td></td></tr>
<tr><td>103 3</td><td>GRAY
26231</td><td>12-INCH</td><td>E-174
AIRCRAFT SERIAL NUMBERS IN VERTICAL BLOCK LETTERS PER RDAF DRAWING NO. (FMS 164-135)</td></tr>
<tr><td>104 4</td><td>BLACK
37038</td><td>12-INCH</td><td></td></tr>
</table>

A-00GV-00-1-0122X40

Figure 11-2. Aircraft External Markings. (Sheet 28)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKING
105 5	BLACK 37038	12-INCH	
106	YELLOW 33617	1/4-INCH	
107	YELLOW 33617	1/4-INCH	
108	YELLOW 33617	1/4-INCH	
109	YELLOW 33617	1/4-INCH	

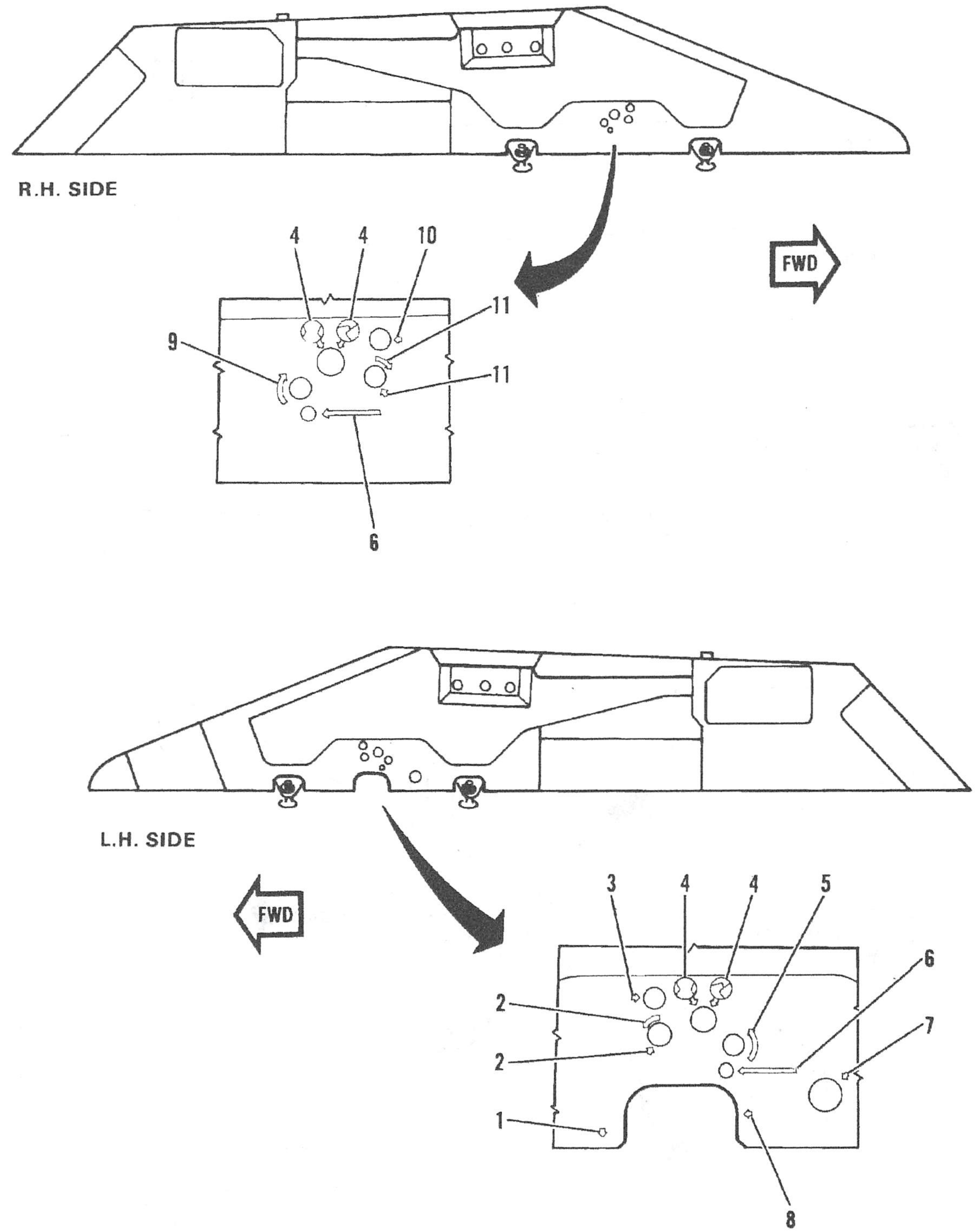
A-00GV-00-1-0123X40

Figure 11-2. Aircraft External Markings. (Sheet 29)

INDEX NUMBER 6	COLOR	SIZE LETTERS	MARKINGS
110 2	GRAY 36118	3/16 -INCH	FS 258.5 DISCONNECT MTP RACK HARNESS LOCATED INSIDE 16B5546 DOOR BEFORE REMOVING LANYARD TO LOWER DOOR. .009 WL 60.0

A-00GV-00-1-0124X40

Figure 11-2. Aircraft External Markings. (Sheet 30)



WING WEAPON PYLON

Figure 11-3. Pylon Markings. (Sheet 1 of 8)

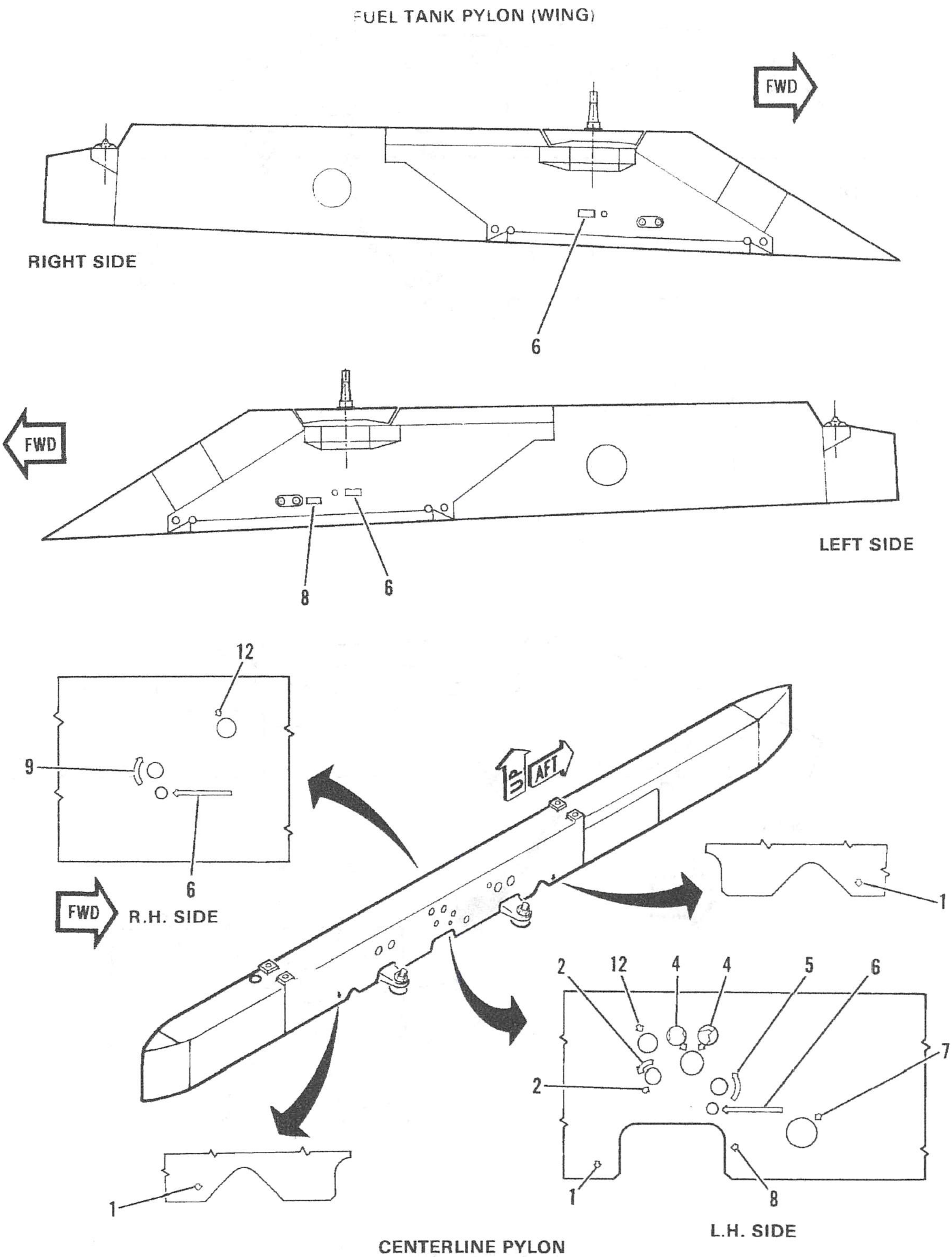
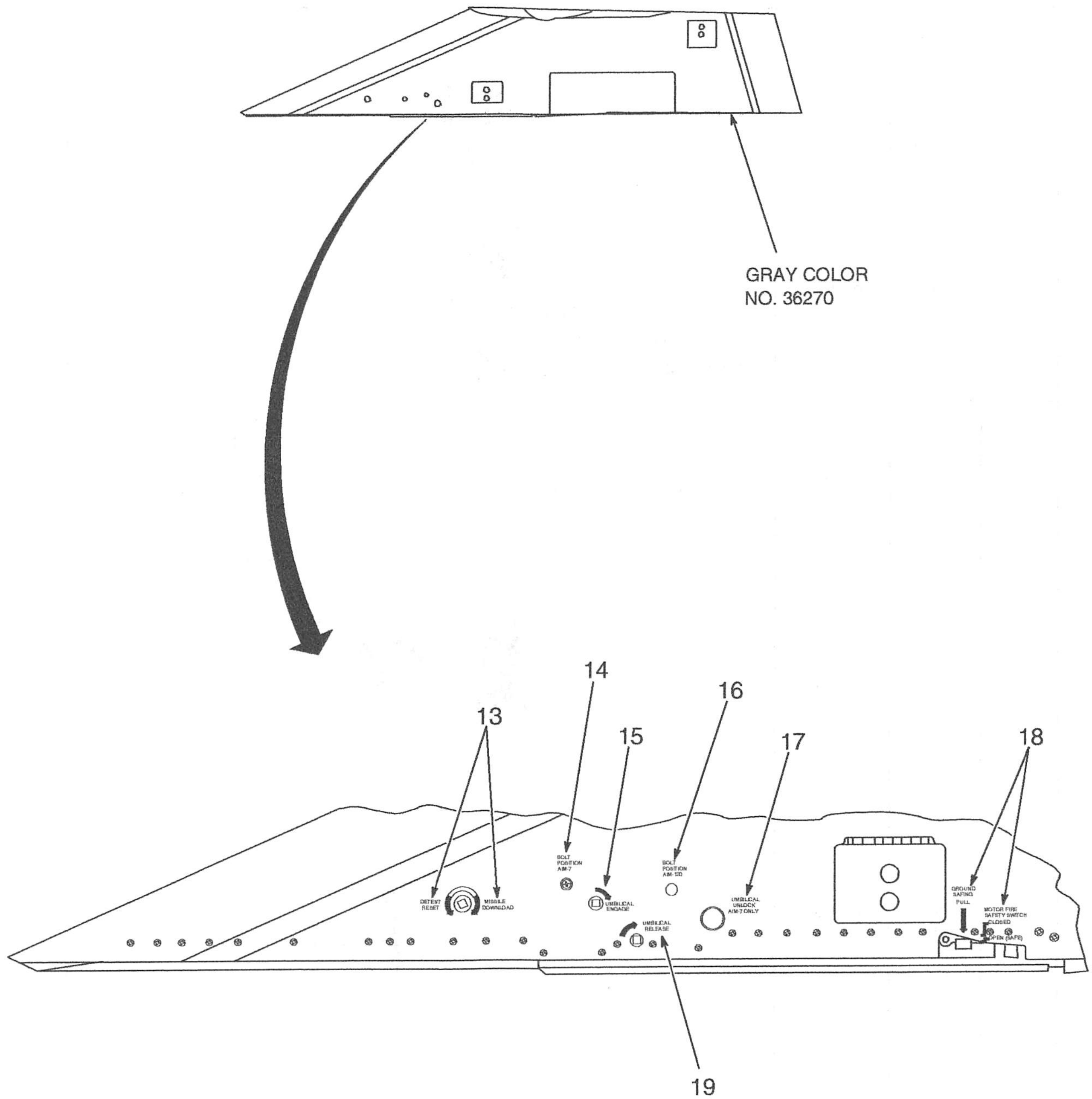


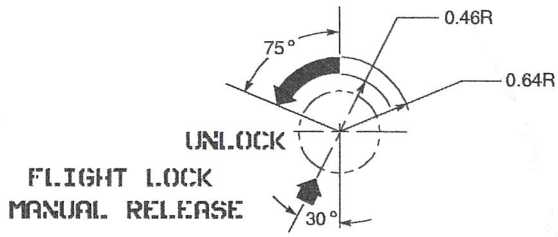
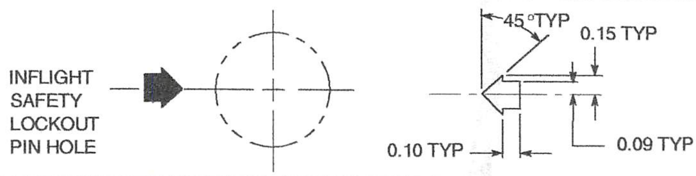
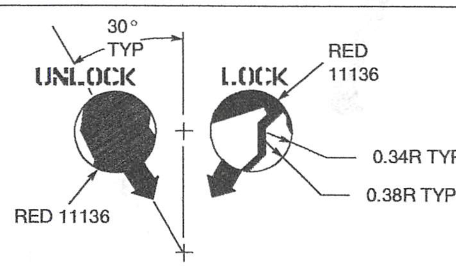
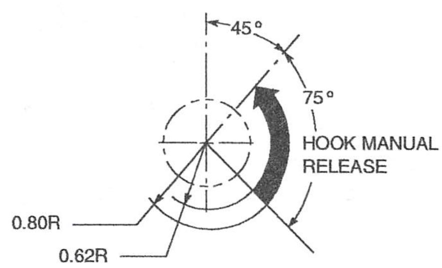
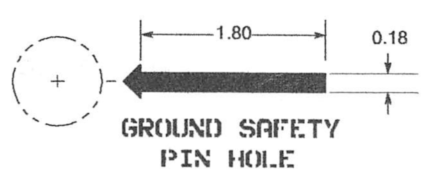
Figure 11-3. Pylon Markings. (Sheet 2)



AIM-7/AIM-120 PYLON

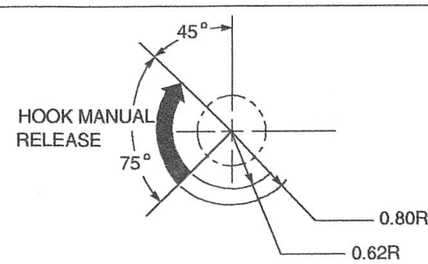
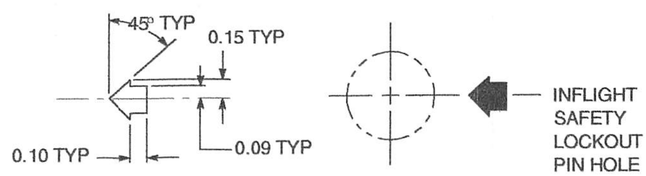
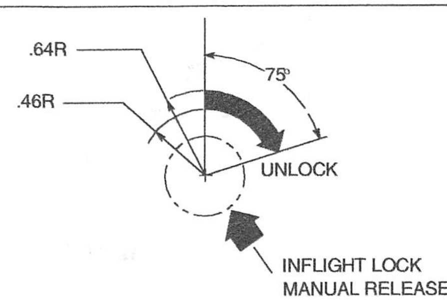
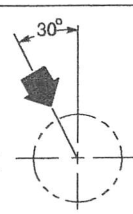
A--00GV-00-1-0126X40

Figure 11-3. Pylon Markings. (Sheet 3)

INDEX NO.	COLOR	SIZE LETTERS	MARKING
1	GRAY 36118	1/8 - INCH	
2	GRAY 36118	1/8 - INCH	
3	GRAY 36118	1/8 - INCH	
4		1/8 - INCH	
5	GRAY 36118	3/16 - INCH	
6	GRAY 36118	1/8 - INCH	

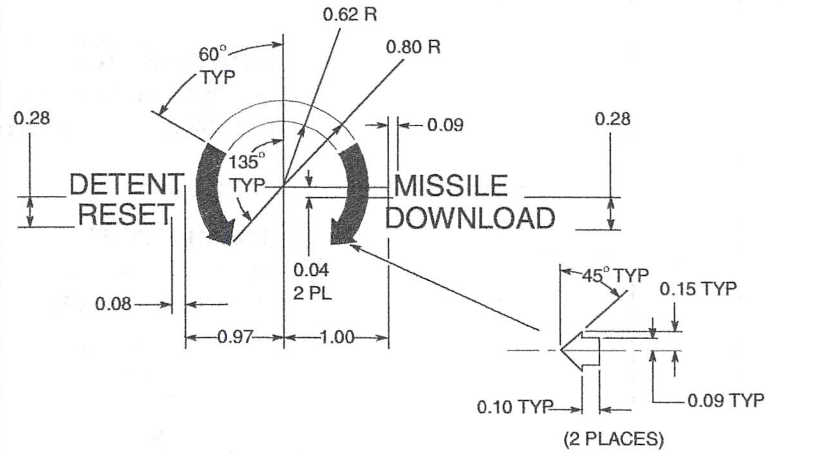
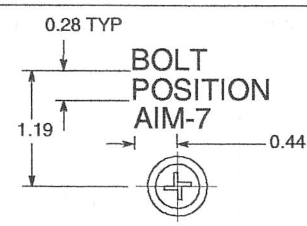
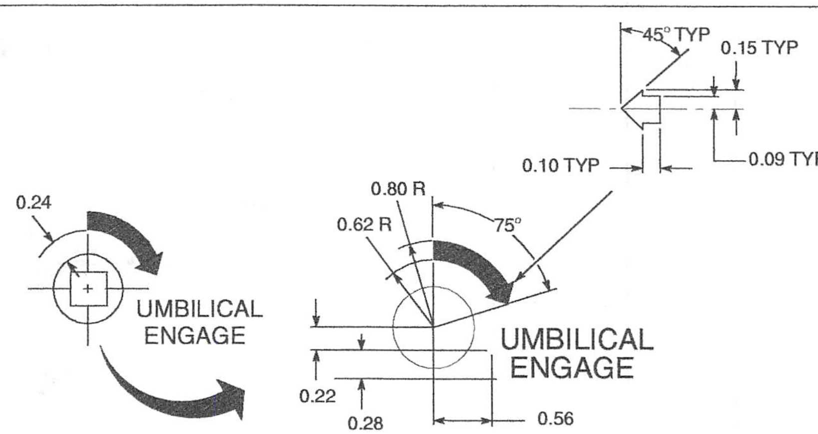
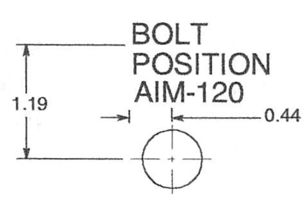
CO-00GV-00-1-0434X99

Figure 11-3. Pylon Markings. (Sheet 4)

INDEX NO.	COLOR	SIZE LETTERS	MARKING
7	GRAY 36118		CAUTION (1/4 - INCH LETTERS) IF RED SHAFT IS VISIBLE LINKAGE IS UNLATCHED (1/8 - INCH LETTERS)
8	GRAY 36118	1/8 - INCH	TORQUE CART RETAINERS TO 250-300 IN LBS
9	GRAY 36118	3/16 - INCH	
10	GRAY 36118	1/8 - INCH	
11	GRAY 36118	1/8 - INCH	
12	GRAY 36118	1/8 - INCH	INFLIGHT SAFETY LOCKOUT PIN HOLE 

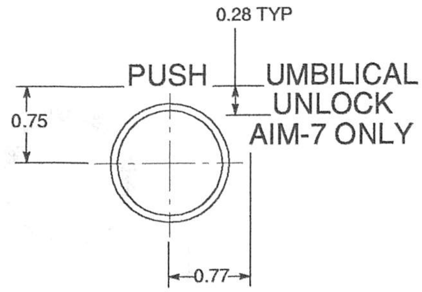
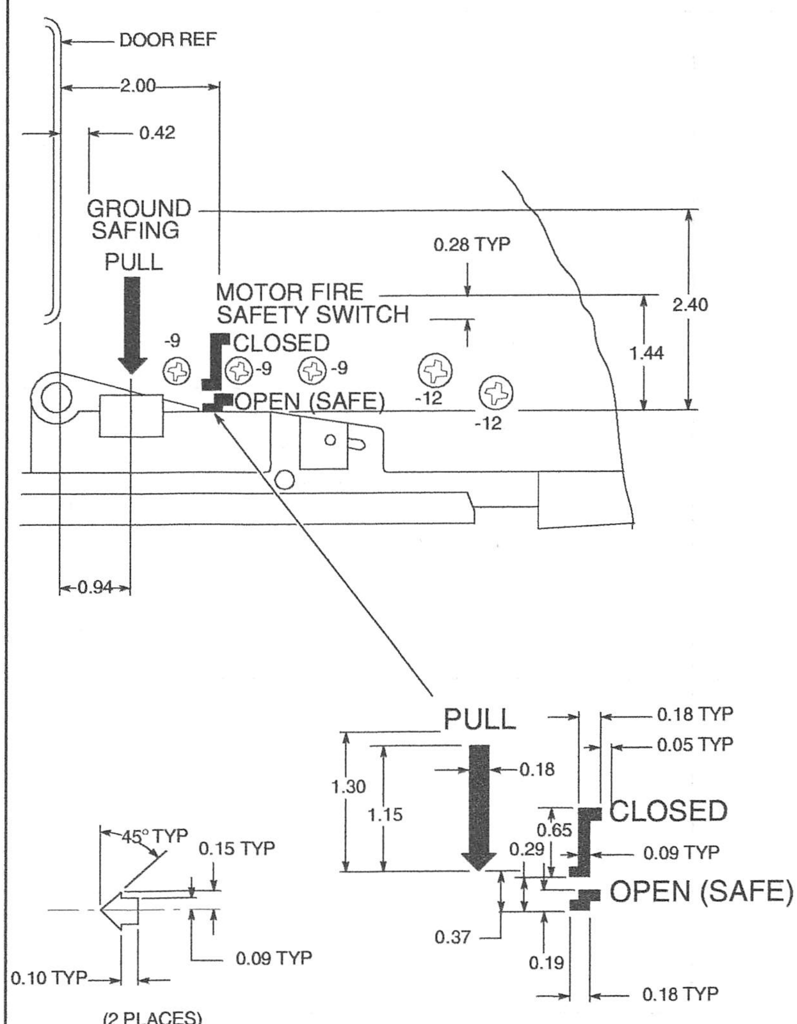
CO-00GV-00-1-0436X99

Figure 11-3. Pylon Markings. (Sheet 5)

INDEX NO.	COLOR	SIZE LETTERS	MARKING
13	GRAY 36118	3/16 - INCH	
14	GRAY 36118	3/16 - INCH	
15	GRAY 36118	3/16 - INCH	
16	GRAY 36118	3/16 - INCH	

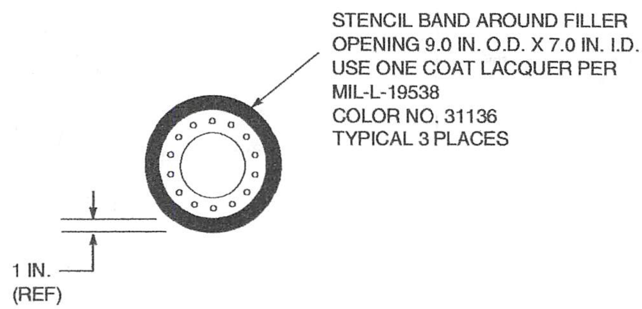
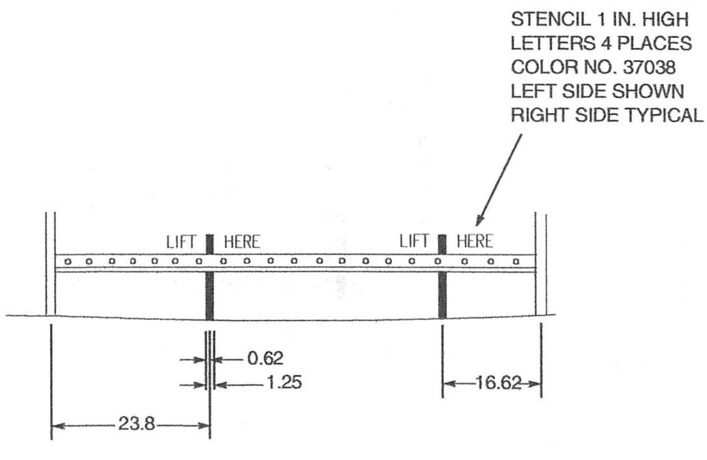
A-00GV-00-1-0127X40

Figure 11-3. Pylon Markings. (Sheet 6)

INDEX NO.	COLOR	SIZE LETTERS	MARKING
17	GRAY 36118	3/16 - INCH	
18	GRAY 36118	3/16 - INCH	

A-00GV-00-1-0128X40

Figure 11-3. Pylon Markings. (Sheet 7)

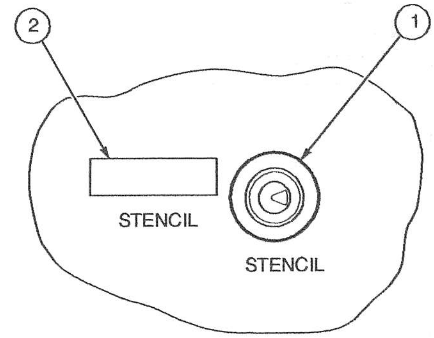
INDEX NUMBER	MARKING
1	
2	

A-00GV-00-1-0129X40

Figure 11-3. Pylon Markings. (Sheet 8)

NOTE

1. ALL MARKING COLORS ARE IN ACCORDANCE WITH FEDERAL STANDARD 595.
2. ALL RED MARKINGS ARE COLOR NO. 31136.
3. ALL BLACK MARKINGS ARE COLOR NO. 37038.
4. GRAY COLOR NO. 36270.
5. FUEL TANK IDENTIFICATION/NAME PLATE SHALL BE MASKED OFF BEFORE PAINTING.



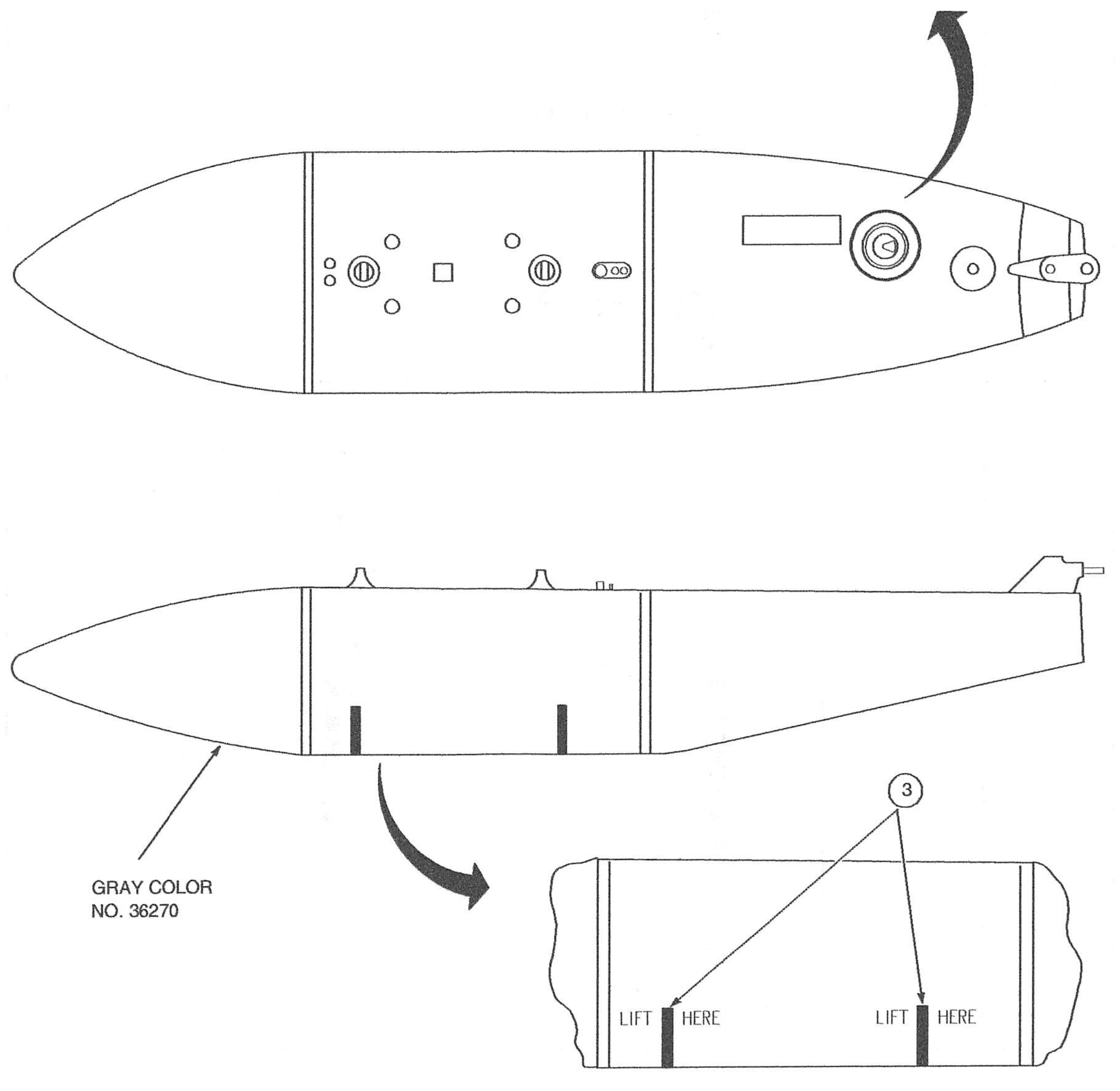
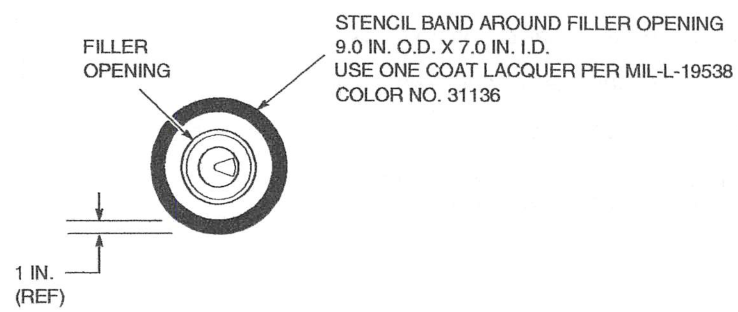
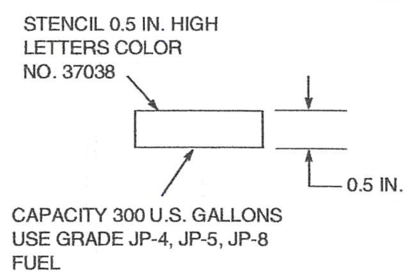
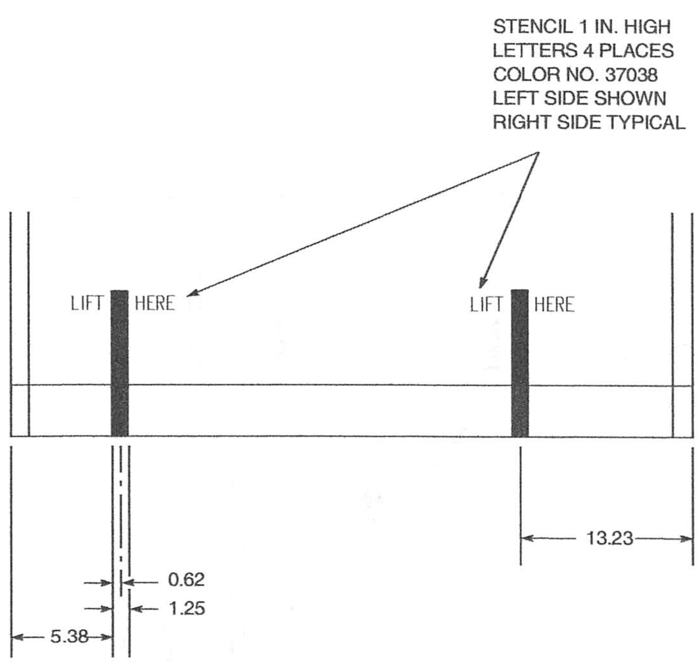


Figure 11-4. Fuel Tank Markings, 300-Gallon. (Sheet 1 of 2)

<table>
<tr><th>INDEX NUMBER</th><th>MARKING</th></tr>
<tr><td>1</td><td>


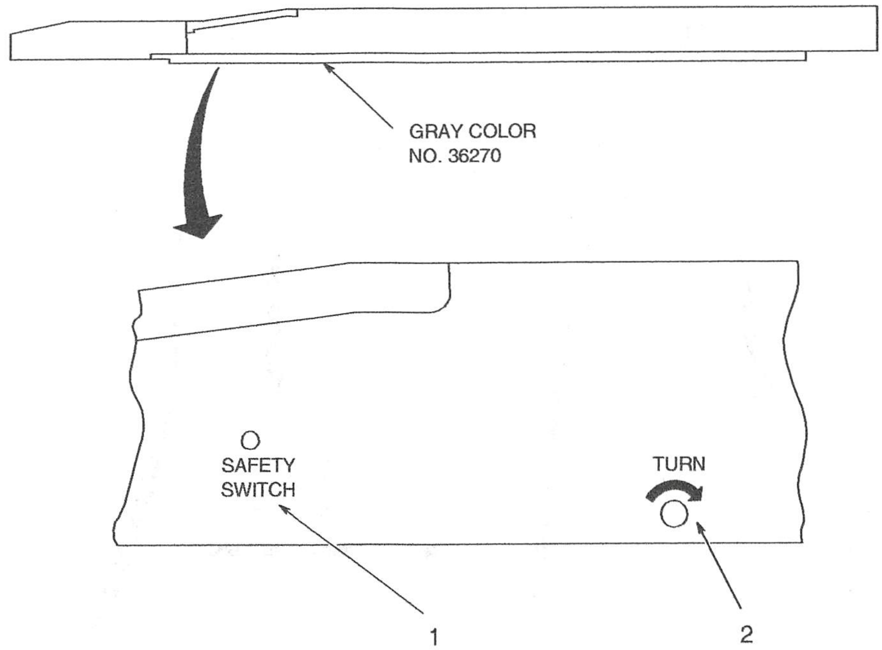
</td></tr>
<tr><td>2</td><td>


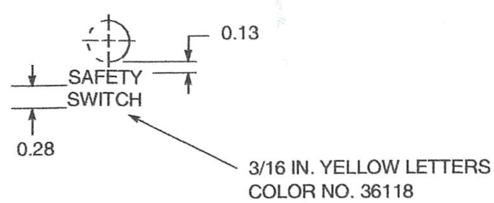
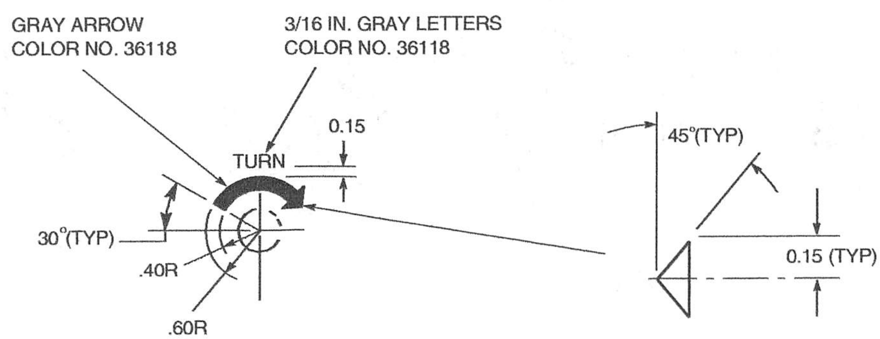
</td></tr>
<tr><td>3</td><td>


</td></tr>
</table>

CO-00GV-00-1-0451X99

Figure 11-4. Fuel Tank Markings, 300-Gallon. (Sheet 2)



INDEX NUMBER	MARKING
1	
2	 **LEFT SIDE SHOWN RIGHT SIDE OPPOSITE**

CO-00GV-00-1-0455X99

Figure 11-6. AIM-9 Guided Missile Launcher Markings.

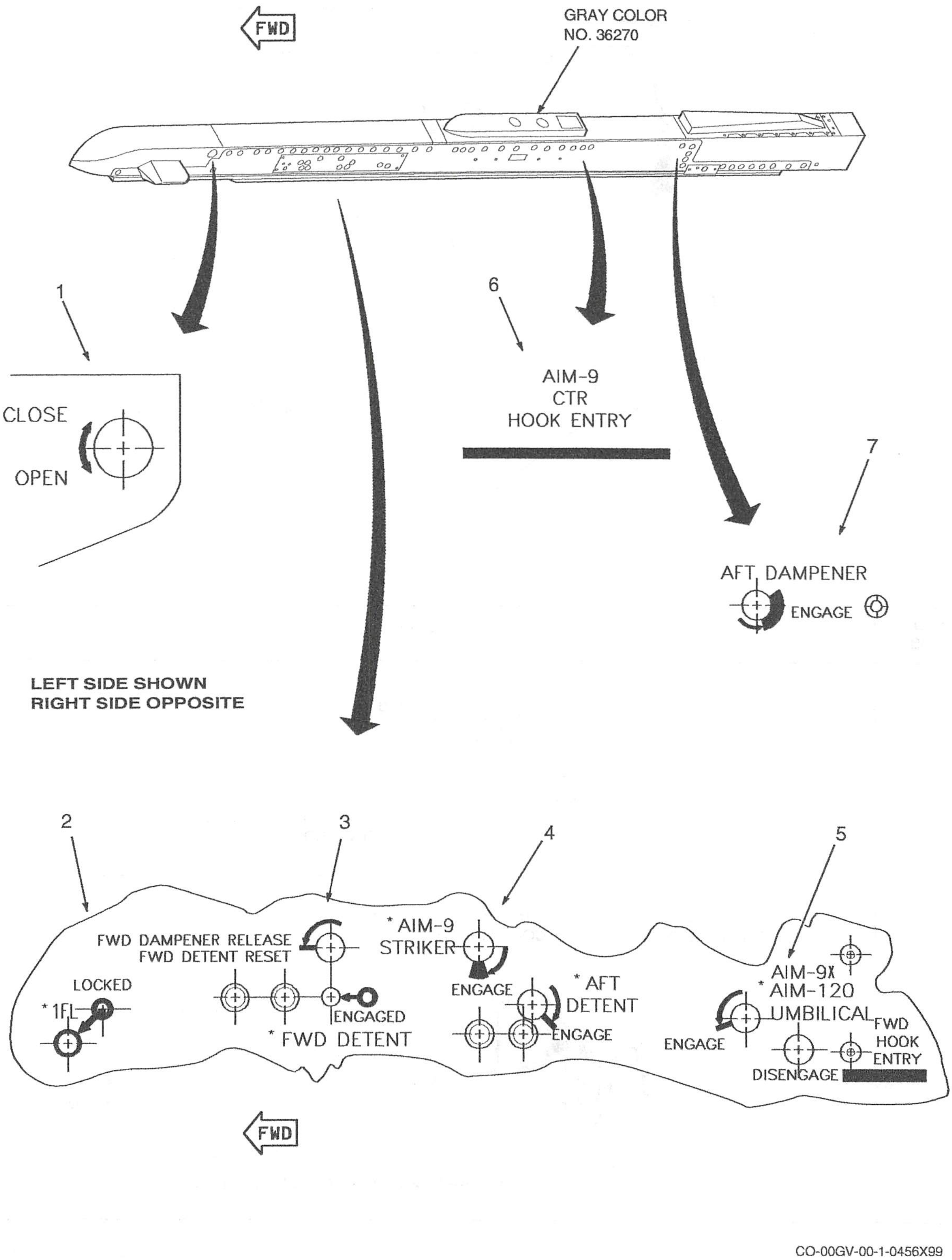
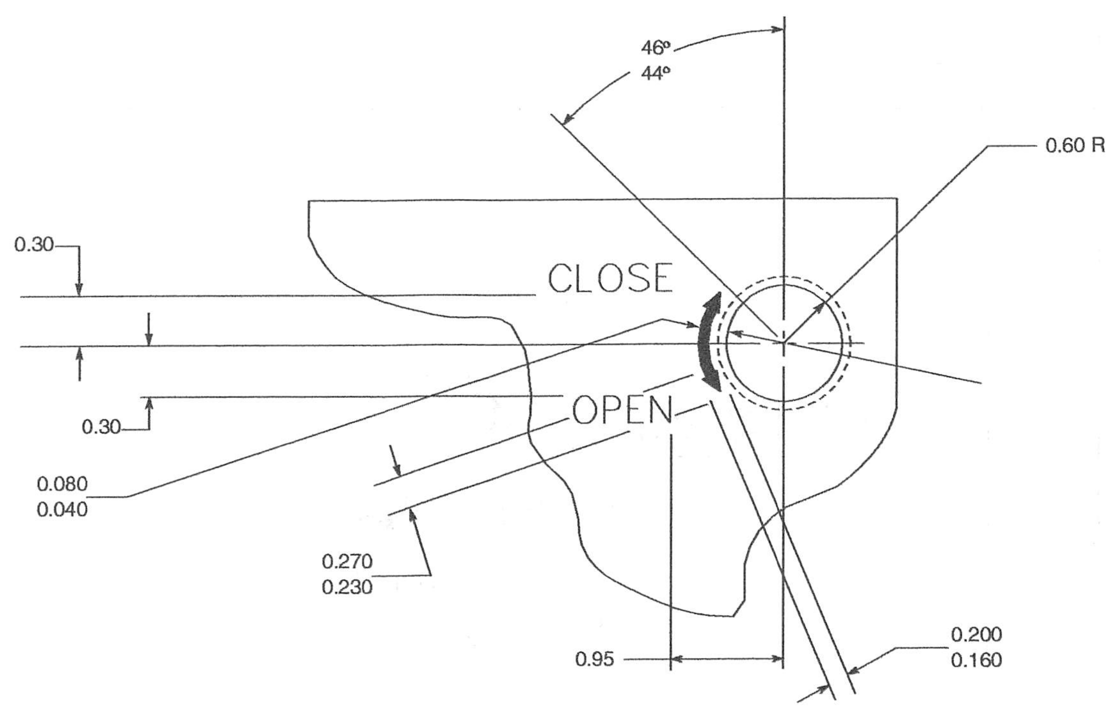


Figure 11-7. LAU-129 Guided Missile Launcher Marking. (Sheet 1 of 5)

1. MARK ALL LETTERS AND ARROWS IN ACCORDANCE WITH MIL-STD-130 USING FIND NO. 6 INK. CHARACTERS TO BE 0.19 HIGH AND MAY BE CAST IN 0.020 TO 0.030 DEEP AND FILLED WITH INK, AFTER PAINTING, OR MAY BE STENCILED ON FLUSH SURFACE USING APPROPRIATE SIZE STENCIL.

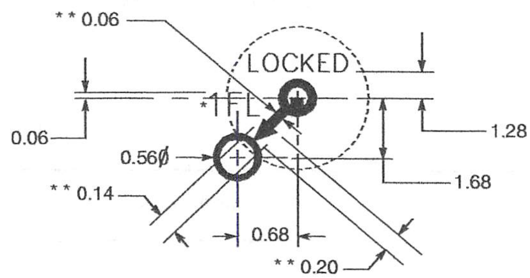
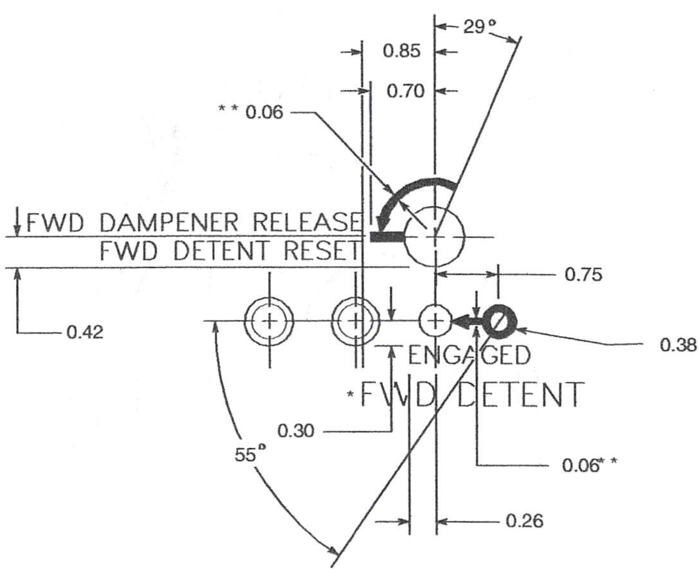
2. WORDS MARKED WITH * TO BE 0.25 HIGH. UNLOCATED WORDS TO BE CENTERED APPROXIMATELY AS SHOWN.

3. MEASUREMENTS MARKED WITH ** APPLY TO INDEX NO. 2 THRU 5.

<table>
<tr><th>INDEX NUMBER</th><th>MARKINGS</th></tr>
<tr><td>1</td><td>
</td></tr>
</table>

CO-00GV-00-1-0457X99

Figure 11-7. LAU-129 Guided Missile Launcher Marking. (Sheet 2)

<table>
<tr><th>INDEX NUMBER</th><th>MARKINGS</th></tr>
<tr><td>2</td><td>
</td></tr>
<tr><td>3</td><td>
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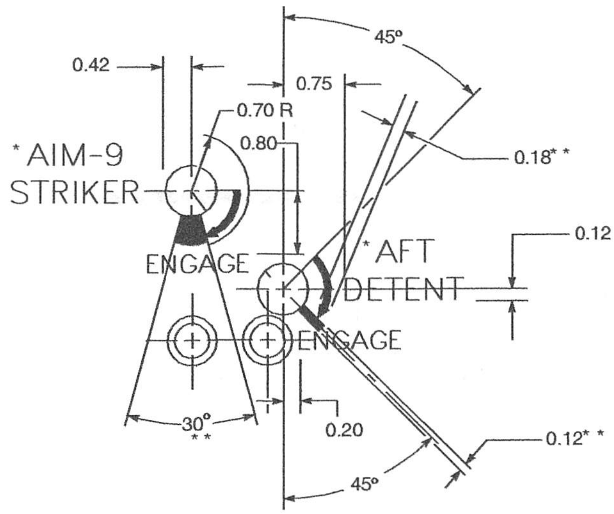
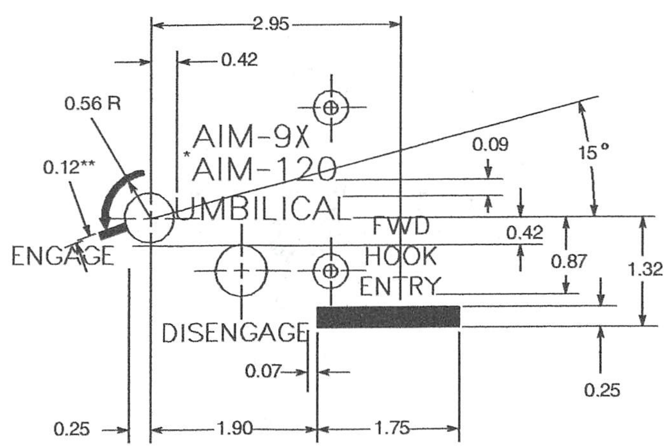
</table>

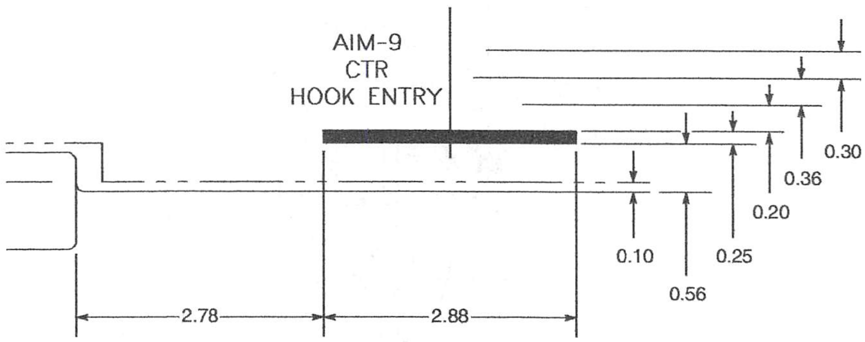
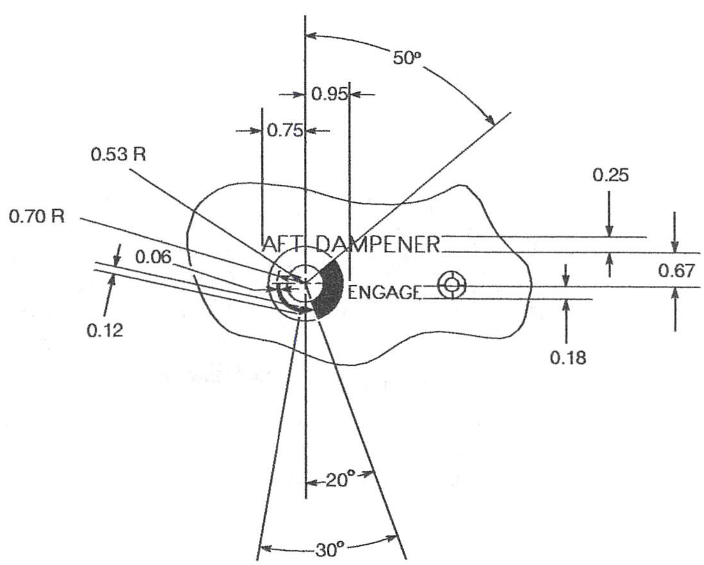
CO-00GV-00-1-0458X99

Figure 11-7. LAU-129 Guided Missile Launcher Marking. (Sheet 3)

<table>
<tr><th>INDEX NUMBER</th><th>MARKINGS</th></tr>
<tr><td>4</td><td>
</td></tr>
<tr><td>5</td><td>
</td></tr>
</table>

CO-00GV-00-1-0459X99

Figure 11-7. LAU-129 Guided Missile Launcher Marking. (Sheet 4)

INDEX NUMBER	MARKINGS
6	
7	

CO-00GV-00-1-0460X99

Figure 11-7. LAU-129 Guided Missile Launcher Marking. (Sheet 5)

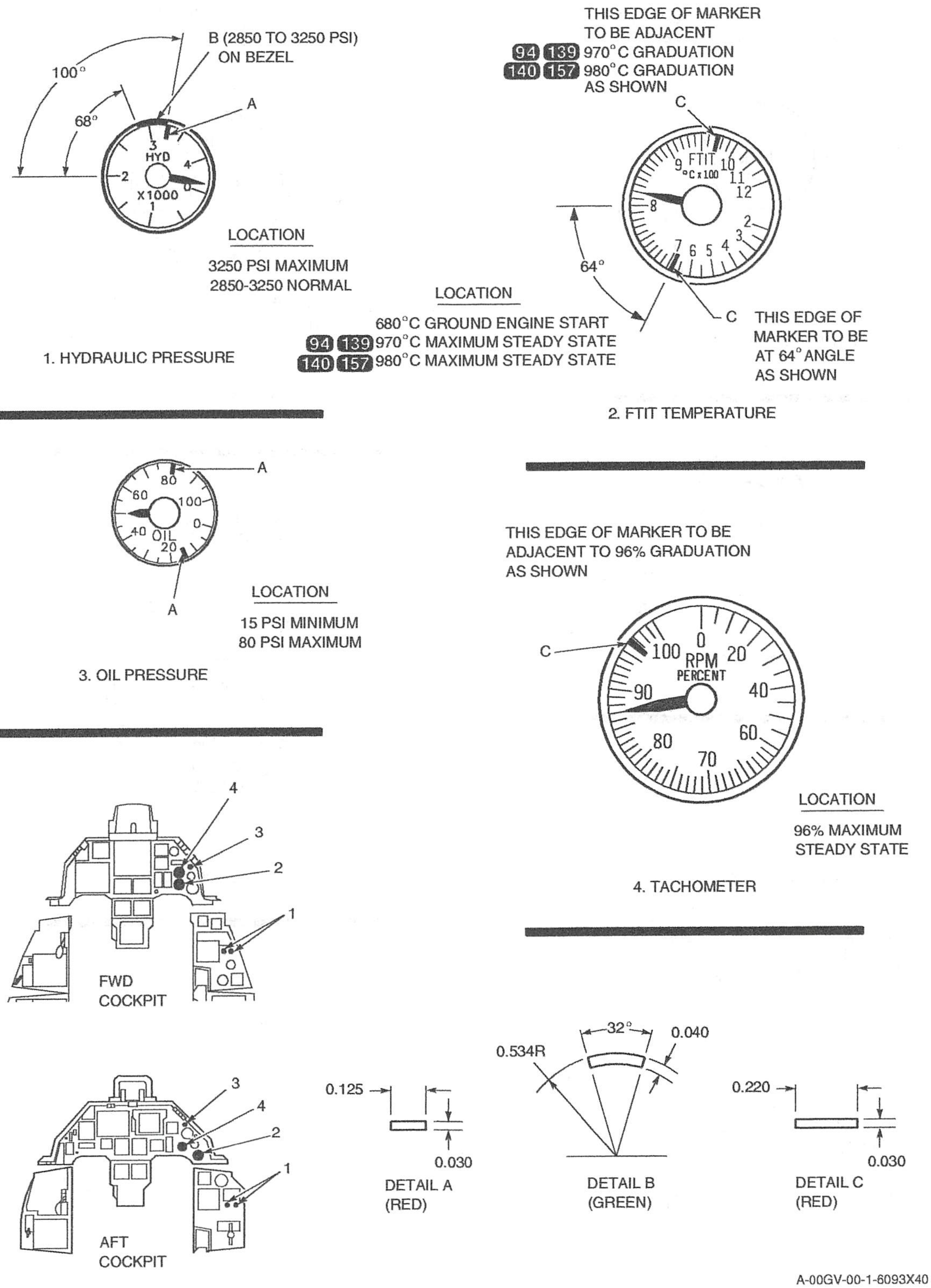


Figure 11-8. Instrument Range Markings.

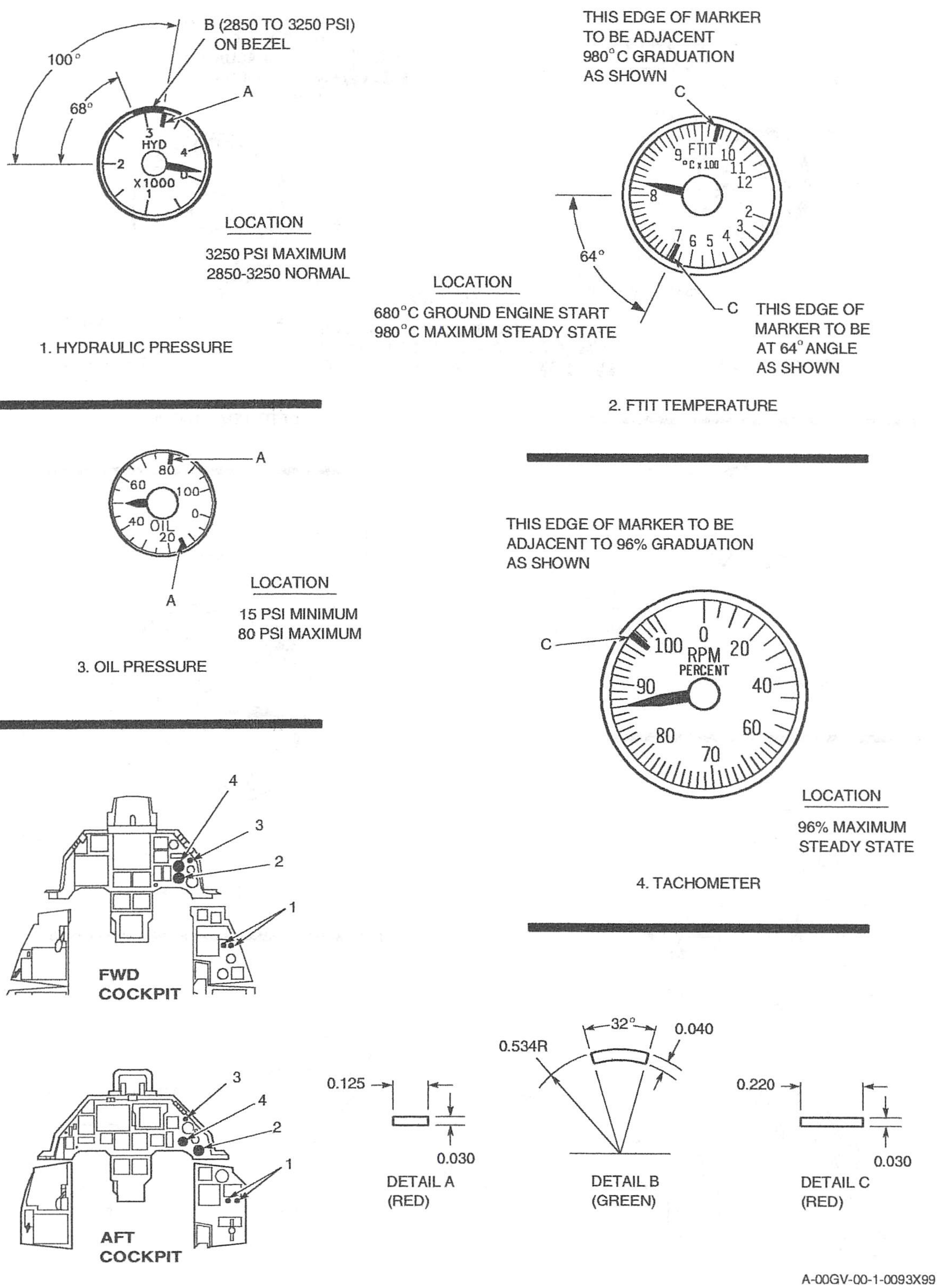


Figure 11-8. Instrument Range Markings.

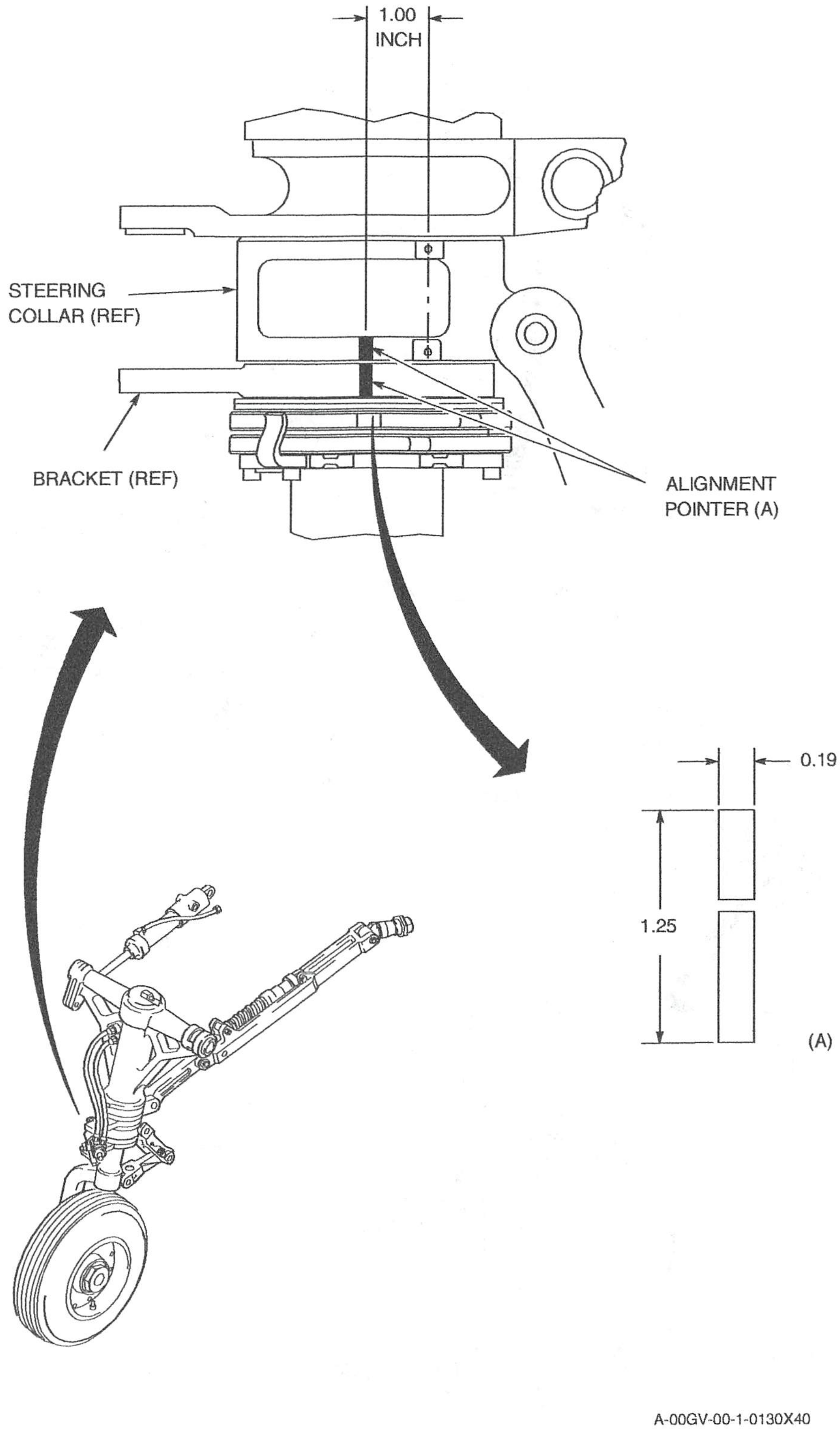


Figure 11-9. NLG Shock Strut Marking for Steering Alignment.

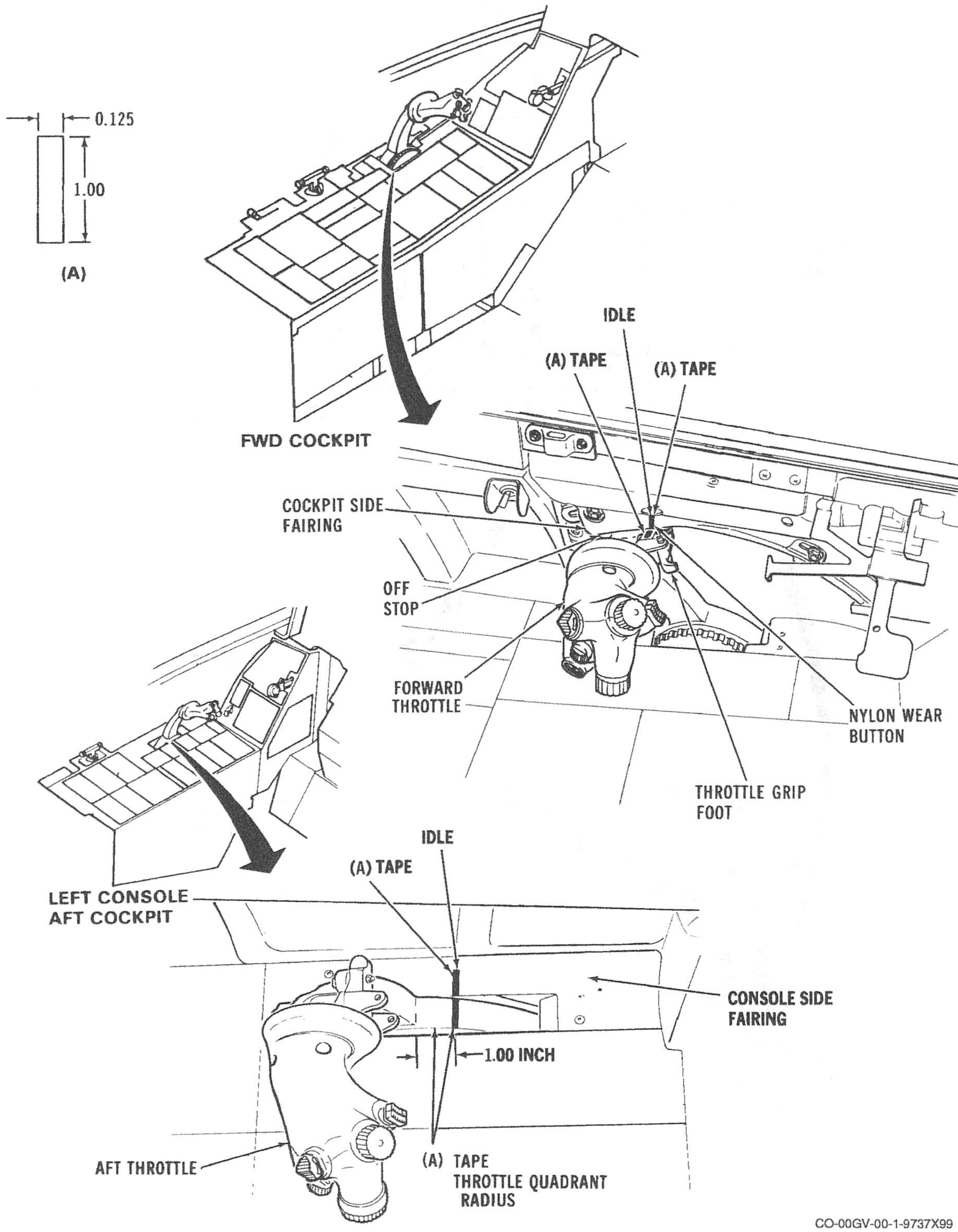


Figure 11-10. Marking Throttle Idle Position.

CHAPTER 12

SERVICING

12.1 GENERAL.

This section presents a summary of servicing. The instructions for servicing are in TO 1F-16( )-2-12JG-00-1.

12.2 SUPPORT EQUIPMENT.

The support equipment required for servicing is listed in Table 12-1

Table 12-1. Servicing Support Equipment.

PART NO.	NOMENCLATURE	ALTERNATE
16A24012-1	Adapter, EPU Spin Port	None
12A1005-3	Adapter, Fuel Drain	None
16A-01015-1	Adapter, Pressure Test	None
S-W-C-8340-1	Bottle, Applicator, 16 oz.	None
PWA-51192	Cap, Oil Drain	None
	Container, Fuel Drain (Mason Jar)	None
COML	Container, Oil Drain	Equivalent
MIL-P-52415B, Grade C	Container, 5-Gallon Rubber	None
5-62887-2	Cordage Assembly	None
AN910-2J	Coupling, EPU	None
155S5-4D	Coupling, Hydraulic System Filler and Pressurization Unit	None
D758	Drain Line	Equivalent
L-F-36	Faceshield	None
(Reference TO 00-25-172 or Local Fire Safety Directives)	Fire Extinguisher	Equivalent
	Fuel Truck	
	Funnel (Long Flex Gooseneck)	
MIL-G-8348	Gage, Air Pressure, 0-400 PSI	None
1075	Assembly, Tire Inflator, 0-600 PSI	None
236D100-1	Gage, Air Pressure, 0-3000 PSI	None
1379AX2HUQE	Gage, Pressure, Dial Indicating	None
A/M32A-60A	Generator Set	Equivalent
H-133C/AIC	Headset, Microphone	H-157/AIC
MIL-F-83766	Hydraulic System Filler and Pressurization Unit	None
AN816-6J	Nipple (EPU)	None
MD-3A	Nitrogen Servicing Trailer	Equivalent
USAF SERD AF00764	Nitrogen, Self Generating Cart	Equivalent
	Oil Can, Squirt-Type	Equivalent

Table 12-1. Servicing Support Equipment - Continued.

PART NO.	NOMENCLATURE	ALTERNATE
TMU-27/M	Oxygen Servicing Trailer, Liquid	Equivalent
	Pan, Liquid Oxygen	Equivalent
47R16420 (05060)	Platform, Maintenance (Type B-1)	Equivalent
940F232G01	Pod Filler Unit	None
60M0D623	Portable Flash Drain Drum	Equivalent
AN919-6J	Reducer (EPU)	None
WE-1	Table, Oxygen Servicing	Equivalent
PMU-29/E	Tank and Pump Unit (With Nozzle W18F8)	Equivalent
AN938J6	Tee (EPU)	None
	Vent Tube Assembly (LOX)	Ref TO 15X-1-1
	Vinyl Plastic Sheets	
61078-2	200 Wrench, External Tank	None

12.3 SUPPLIES (CONSUMABLES) USED DURING SERVICING.

The supplies (consumables) used during servicing are listed in Table 12-2.

Table 12-2. Servicing Supplies (Consumables).

NOMENCLATURE	SPECIFICATION/GOVT STD NO.	PART NO. (MFG CODE)
Ammonia	O-A-445	
6 Cleaning Solvent (Nonaromatic)		P6174-1 (81755)
Cheesecloth	DDD-C-601	
Cloth, Lint-Free	CCC-C-46	
Cloth, Rymple - Purified		301 (81755)
1 Compound, Solvent	MIL-C-38736	
Dye	FE & C NO. 1 Blue	COML
Food Coloring	MIL-F-35093	
Gasket		362-580-9006 (99193)
Gasket		362-580-9008 (99193)
Grease	MIL-G-81827	
Grease, Aircraft	MIL-G-23827	
Grease, Molybdenum Disulfide	MIL-G-21164	
Hydraulic Fluid	MIL-H-5606/MIL-H-83282	
Isopropyl Alcohol	TT-I-735	
Jet Fuel JP-4 (Alternate)	MIL-T-5624	
Jet Fuel JP-5 (Alternate)	MIL-T-5624	
Jet Fuel JP-8 (Preferred)	MIL-T-83133	

Table 12-2. Servicing Supplies (Consumables) - Continued.

NOMENCLATURE	SPECIFICATION/GOVT STD NO.	PART NO. (MFG CODE)
Jet Fuel JP-8+100 (Preferred)	MIL-DTL-83133E	
JOAP Sampling Kit		SS342 (83421)
Liquid Oxygen	MIL-0-27210, Type II	
Liquid Soap, Nonionic Dishwashing		COML
Lubricating Oil	VV-L-800A	
Lubricating Oil	MIL-L-7808J or later revision	
Nitrogen	BB-N-411, Type I, Class 1, Grade B	
Packing		M83248/1-012
Packing		M83248/1-908
Packing		MS28778-3
Packing		MS28775-015
Plastic Polish		WHIZ-LITE 5602261 (12849) MICROGLOSS 3MG8 (32834) WHIZ 5602260 (12849)
Syringe, Disposable, Plastic		COML
Towel, Disposable		347200 (33591)
Tempilstik, 700°F(371°C)		COML
Thermomelt, 700°F(371°C)		COML
Windex (with vinegar)		COML
Wire, Safety		MS20995C32
Wire, Safety		MS20995C20

12.4 SPECIAL TOOLS.

The special tools used during servicing are listed in Table 12-3.

Table 12-3. Servicing Special Tools.

NOMENCLATURE	DESCRIPTION	USE AND APPLICATION
Torque Wrench	0-20 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-40 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-75 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-100 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-110 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-140 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-144 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)
Torque Wrench	0-530 inch-pounds	Torque nuts, bolts, and clamps (JG12-00-01)

12.5 SERVICING PRECAUTIONS.

The following are servicing precautions:

a. Aircraft shall be safe for maintenance in accordance with TO 1F-16( )-2-10JG-00-1.

b. Refer to TO 1F-16( )-2-12JG-00-1 for safety requirements and protective gear.

12.6 WALK AREAS.

The external surface areas that may be walked upon are shown in Figure 12-1. Protective covers shall be used on walk areas during high-volume traffic. Protective shoe coverings or soft-soled, non-scuff shoes without nails shall be used at all other times.

12.7 SERVICING ACCESS.

Refer to Figure 12-2 for servicing access locations.

12.8 SERVICING SUMMARY.

Refer to Table 12-4.

Table 12-4. Servicing Table.

ITEM	REFERENCE	LIQUID/GAS USED	SUPPORT EQUIPMENT/CONSUMABLES
Refueling	Figure 12-3 and Table 12-5	Jet Fuel JP-4 (Alternate)	Fuel Truck
		Jet Fuel JP-5 (Alternate)	58 Wrench, External Tank (3)
		Jet Fuel JP-8 (Preferred)	
		Jet Fuel JP-8 + 100 (Preferred)	
Defueling	Figure 12-4	Nitrogen	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart
			Fuel Truck
			Generator Set
			Pressure Test Adapter
			Fuel Drain Adapter
			Portable Flash Drain Drum
			Headset, Microphone
			Cordage Assembly
Draining Water From Fuel Tanks	Figure 12-5		Fuel Drain Adapter
			Fuel Drain Container (Mason Jar)
			Food Coloring
Liquid Oxygen	Figure 12-6	Liquid Oxygen	Liquid Oxygen Servicing Trailer
			Liquid Oxygen Drain Pan (two each)
			Vent Tube Assembly
			Fire Extinguisher
			Servicing Table
			Ground Cable (two)
			Vent Cap
Engine Oil	Figure 12-7	Lubricating Oil	Tank and Pump Unit

Table 12-4. Servicing Table - Continued.

ITEM	REFERENCE	LIQUID/GAS USED	SUPPORT EQUIPMENT/CONSUMABLES
		(MIL-L-7808J) JOAP Sampling Kit	
Main Generator - Constant-Speed Drive	Figure 12-8	Lubricating Oil (MIL-L-7808)	Tank and Pump Unit Torque Wrench, 0-125 Inch-Pounds Oil Drain Container Packing, M83248/1-905, -910, -012 Safety Wire, MS20995C20
Accessory Drive Gearbox	Figure 12-9	Lubricating Oil (MIL-L-7808)	Tank and Pump Unit Torque Wrench, 0-144 Inch-Pounds Oil Service Adapter Packing, M83248/1-908 Safety Wire, MS20995C32
EPU Gearbox	Figure 12-10	Nitrogen Lubricating Oil (MIL-L-7808)	Squirt Oil Can Tank and Pump Unit (with nozzle) Nitrogen Servicing Trailer Coupling EPU Spin Port Adapter Gage, Pressure, Dial Indicating Nipple Reducer Tee Torque Wrench, 0-530 Inch-Pounds Safety Wire, MS20995C20 Safety Wire, MS20995C32 Packing, MS28778-4 Gasket, 362-580-9006 Gasket, 362-580-9008
Reservoir System Accumulators (Pneumatic and Hydraulic)	Figure 12-11 and Figure 12-12	Nitrogen Hydraulic Fluid (MIL-H-83282 or MIL-H-5606)	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart Waste Fluid Container Faceshield Adapter Assembly Chuck Torque Wrench, 0-40 Inch-Pounds Hydraulic System Filler and Pressurization Unit

Table 12-4. Servicing Table - Continued.

ITEM	REFERENCE	LIQUID/GAS USED	SUPPORT EQUIPMENT/CONSUMABLES
Landing Gear (Pneumatic and Hydraulic)	Figures 12-13 and 12-14	Hydraulic Fluid (MIL-H-83282 or MIL-H-5606)	Faceshield
		Hydraulic Fluid, Aerosol (MIL-H-46170)	Hydraulic System Filler and Pressurization Unit
		Nitrogen	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart
		Preservative Oil (VV-L-800)	Pressure Gage, 0 to 400 PSI
			Torque Wrench, 0-110 Inch-Pounds
			Vinyl Sheets (two each) or Steel Plates (four each)
			Pressure Gage, 0-3000 PSI
			Squirt Can
			Packing, MS28775-015
			Lint-Free Cloth
			Grease for Vinyl Sheets or Steel Plates
			Safety Wire, MS20995C32
Tire Pressure	Figure 12-14	Nitrogen	Nitrogen Servicing Trailer or Self
			Generating Nitrogen Cart
			Faceshield
			Tire Inflator Assembly, 0-600 PSI
Wheel Brakes and JFS Accumulators and Reservoirs	Figure 12-15	Nitrogen	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart
			Faceshield
			Torque Wrench, 0-40 Inch-Pounds
EPU (Pneumatic)	Figure 12-16	Nitrogen	Nitrogen Servicing Trailer
			Faceshield
			Torque Wrench, 0-40 Inch-Pounds
Alternate Landing Gear and Arresting Hook (Pneumatic)	Figure 12-17	Nitrogen	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart
			Faceshield
			Torque Wrench, 0-40 Inch-Pounds
Flight Control Accumulators (Pneumatic)	Figure 12-18	Nitrogen	Nitrogen Servicing Trailer or Self Generating Nitrogen Cart
			Faceshield

Table 12-4. Servicing Table - Continued.

ITEM	REFERENCE	LIQUID/GAS USED	SUPPORT EQUIPMENT/CONSUMABLES
			Torque Wrench, 0-40 Inch-Pounds
Drag Chute Accumulator 5	Figure 12-19	Nitrogen	Faceshield Nitrogen Servicing Trailer or Self Generating Nitrogen Cart Torque Wrench, 0-40 Inch-Pounds
Cooling Turbine Compressor Oil Sump	Figure 12-21	Lubricating Oil (MIL-L-7808)	Plastic Syringe (two each) Torque Wrench, 0-20 Inch-Pounds Safety Wire, MS20995C32
Canopy Servicing		Liquid Soap, Nonionic Dishwashing Isopropyl Alcohol Plastic Polish Water Windex (With vinegar)	Rumplecloth Lint-Free Cotton Cloth Bottle, Applicator, 16 oz Maintenance Platform
Electronic Warfare Pod	Figure 12-20		Pod Filler Unit
Emergency Oxygen	Figure 12-2		Replacement Only
Halon	Figure 12-2		Replacement Only
EPU Propellant	Figure 12-2		Replacement Only

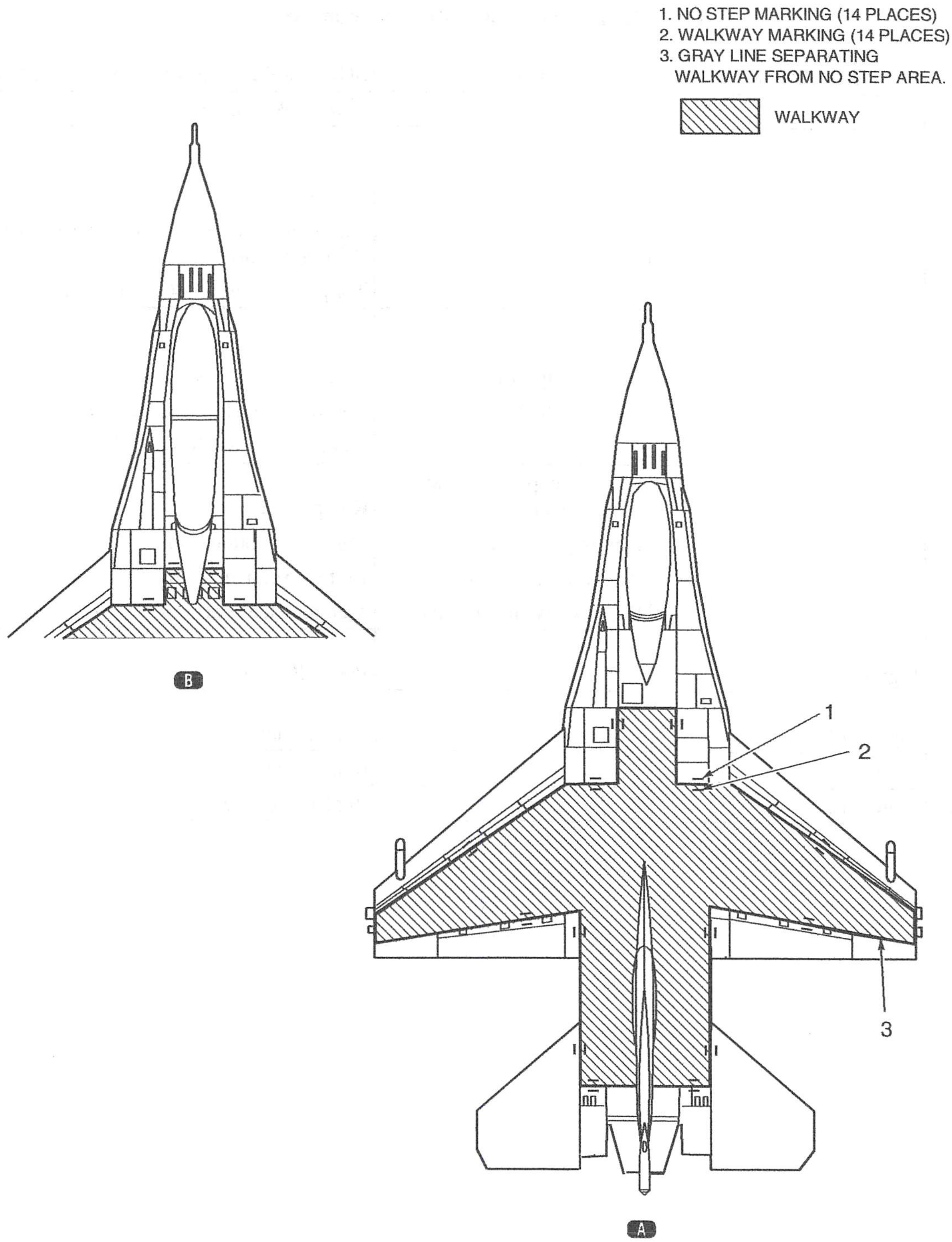


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Figure 12-1. Walk Areas.

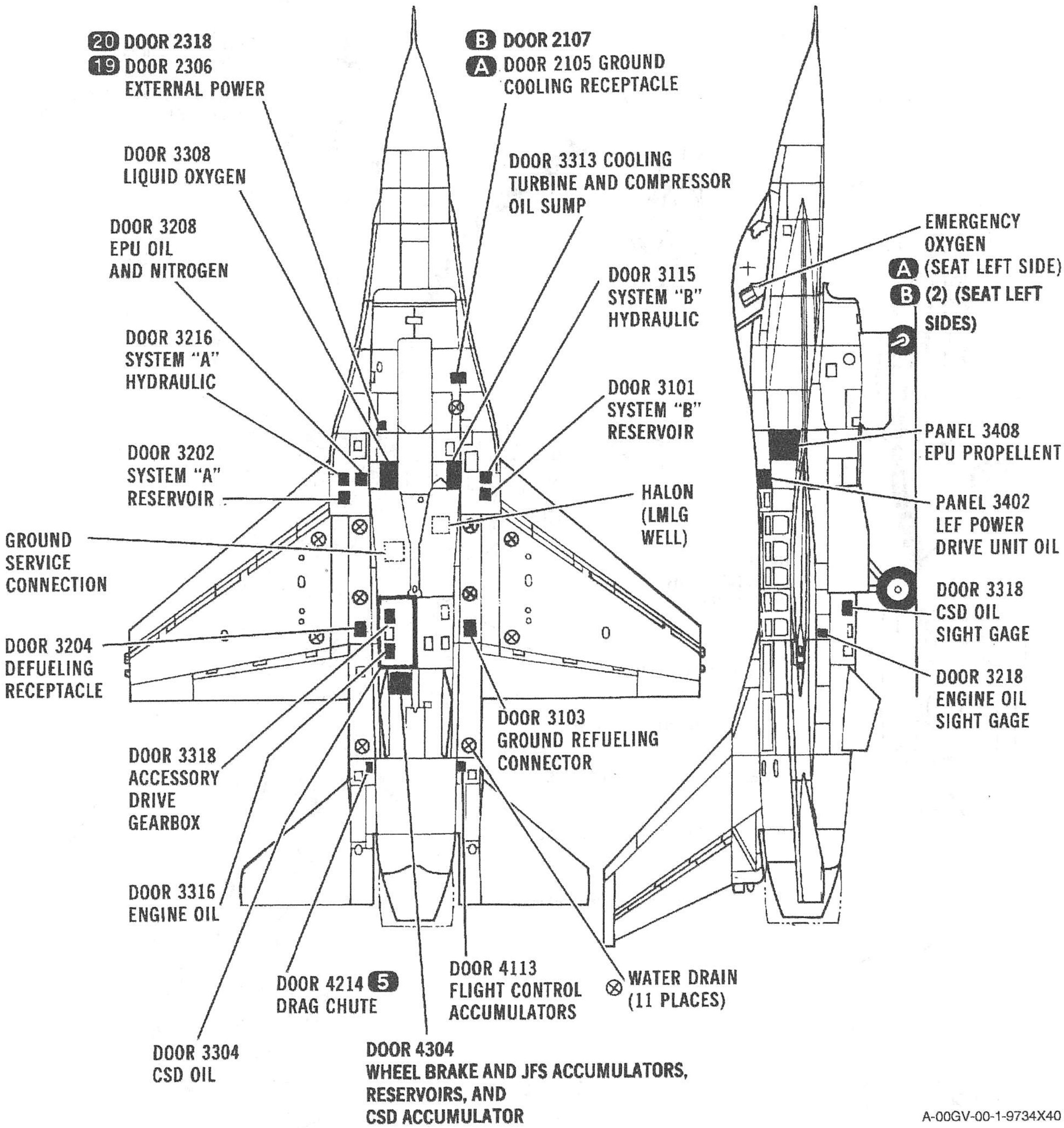


Figure 12-2. Servicing Access Locations.

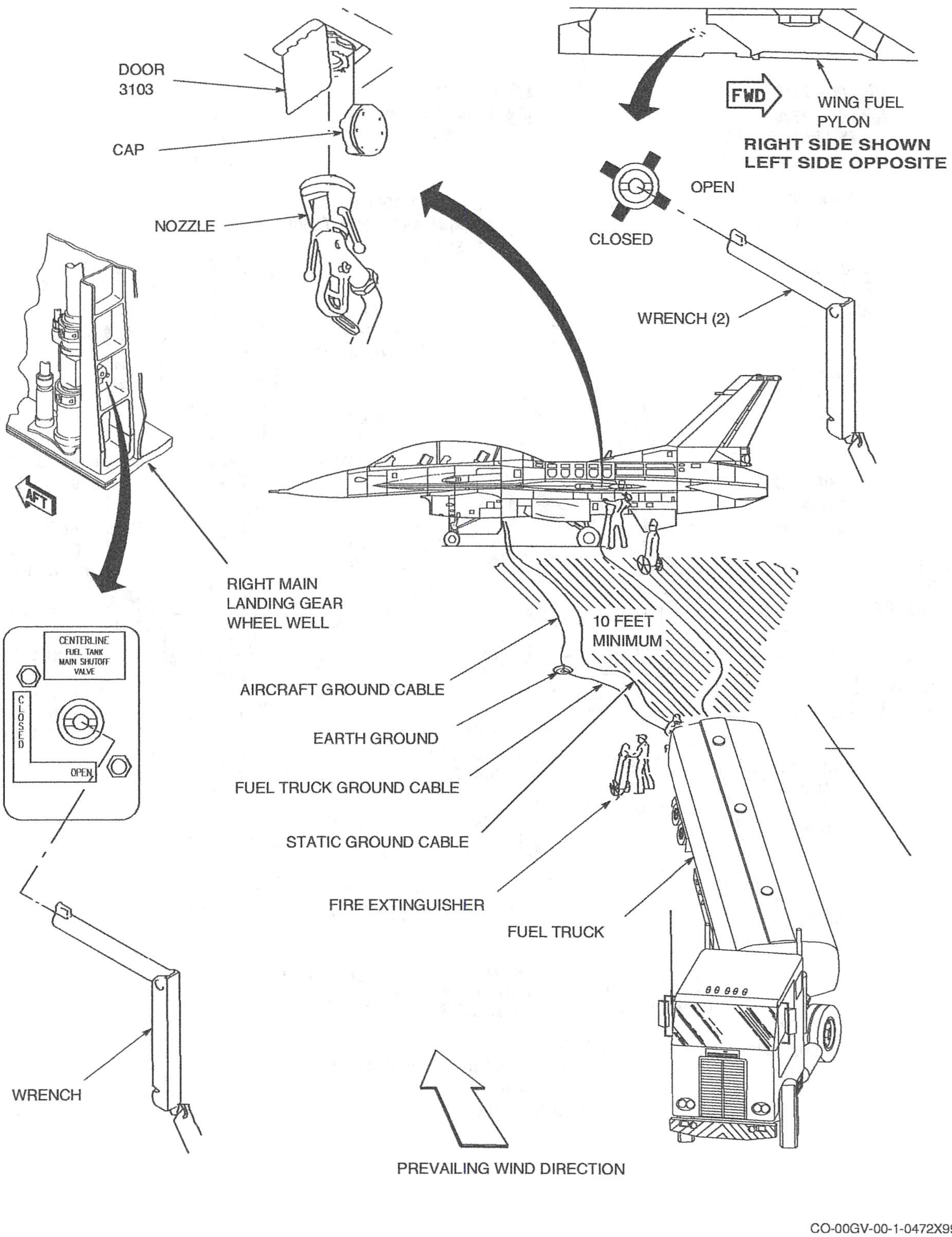


Figure 12-3. Aircraft Refueling.

Table 12-5. Fuel Servicing Guide.

JP 4

FUEL REMAINING (LB) ON TOTALIZER AFTER FLIGHT (PWR OFF)	FUEL REQUIRED (GAL) (APPROXIMATE)							
	INTERNAL TANKS AND EXTERNAL WING TANK (2)		INTERNAL TANKS AND EXTERNAL WING TANK (2)		INTERNAL TANKS AND EXTERNAL CENTERLINE TANK		INTERNAL TANKS ONLY	
	A	B	A	B	A	B	A	B
12,000	266	84						
11,500	343	161	43					
11,000	420	238	120					
10,500	497	315	197	15				
10,000	574	391	274	91				
9,500	651	468	351	168				
9,000	728	545	428	245				
8,500	805	622	505	322	65			
8,000	882	699	582	399	142			
7,500	959	776	659	476	219	36		
7,000	1035	853	736	553	296	113		
6,500	1112	930	813	630	373	190	73	
6,000	1189	1007	890	707	449	267	150	
5,500	1266	1084	967	784	526	344	226	44
5,000	1343	1160	1043	860	603	421	303	121
4,500	1420	1237	1120	937	680	498	380	198
4,000	1497	1314	1197	1014	757	575	457	275
3,500	1574	1391	1274	1091	834	652	534	352
3,000	1651	1468	1351	1168	911	728	611	428
2,500	1728	1545	1428	1245	988	805	688	505
2,000	1804	1622	1505	1322	1065	882	765	582
1,500	1881	1699	1582	1399	1142	959	842	659
1,000	1958	1776	1659	1476	1218	1036	919	736
500	2035	1853	1736	1553	1295	1113	995	812

Instructions: After shutdown, check totalizer on fuel quantity indicator in cockpit. Refer to corresponding figures under fuel required columns to find amount of fuel needed for full servicing. After servicing is complete, number of gallons serviced should closely match figures under fuel required. If not, troubleshooting is necessary.

Table 12-6. Fuel Servicing Guide.

JP-8

FUEL REMAINING (LB) ON TOTALIZER AFTER FLIGHT (PWR OFF)	INTERNAL TANKS, EXTERNAL WING TANKS (2), AND EXTERNAL CENTERLINE TANK		INTERNAL TANKS AND EXTERNAL WING TANKS (2)		INTERNAL TANKS AND EXTERNAL CENTERLINE TANK		INTERNAL TANKS ONLY	
	A	B	A	B	A	B	A	B
12,000	348	165	48					
11,500	421	239	121					
11,000	495	312	195	12				
10,500	568	386	268	86				
10,000	642	459	342	159				
9,500	716	533	416	233				
9,000	770	587	470	287	30			
8,500	843	661	543	361	103			
8,500	863	680	563	380	123			
8,000	936	754	636	453	196	14		
7,500	990	808	690	508	250	68		
7,500	1010	827	710	527	270	87		
7,000	1083	901	783	601	343	161	43	
6,500	1157	974	857	674	417	234	117	
6,000	1230	1048	930	748	490	308	190	8
5,500	1304	1121	1004	821	564	381	264	81
5,000	1377	1195	1077	895	637	455	337	155
4,500	1451	1268	1151	968	711	528	411	228
4,000	1524	1342	1224	1042	784	602	484	302
3,500	1598	1415	1298	1115	858	675	558	375
3,000	1671	1489	1371	1189	931	749	631	449
2,500	1745	1562	1445	1262	1005	822	705	522
2,000	1818	1636	1518	1336	1078	896	778	596
1,500	1892	1709	1592	1409	1152	969	852	669
1,000	1966	1783	1666	1483	1226	1043	926	743
500	2039	1856	1739	1556	1299	1116	999	816

INSTRUCTIONS: After shutdown, check totalizer on fuel quantity indicator in cockpit. Refer to corresponding figures under fuel required columns to find amount of fuel needed for full servicing. After servicing is complete, the number of gallons/liters serviced should closely match the figures under fuel required. If not, troubleshooting is necessary.

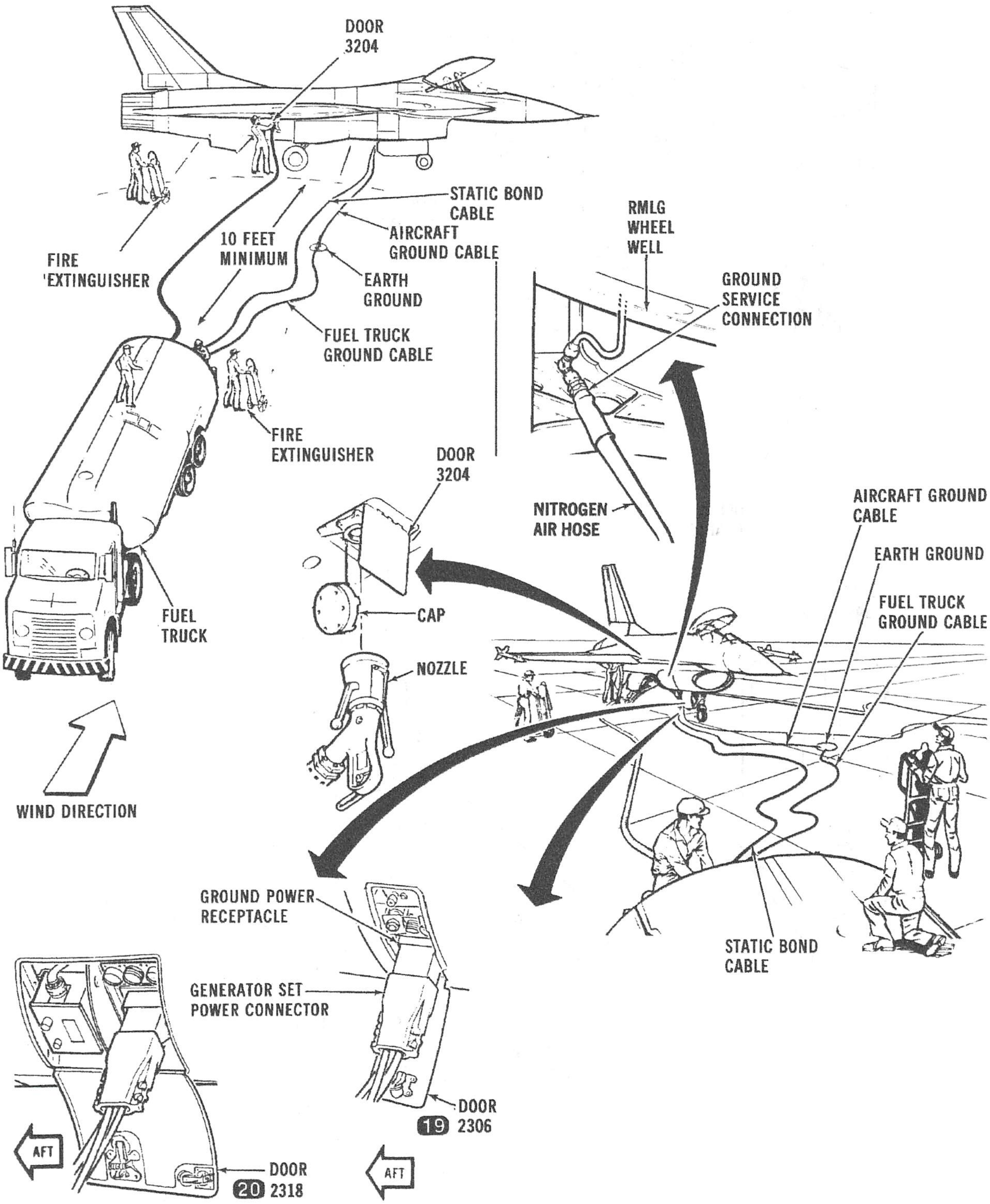


Figure 12-4. Aircraft Defueling.

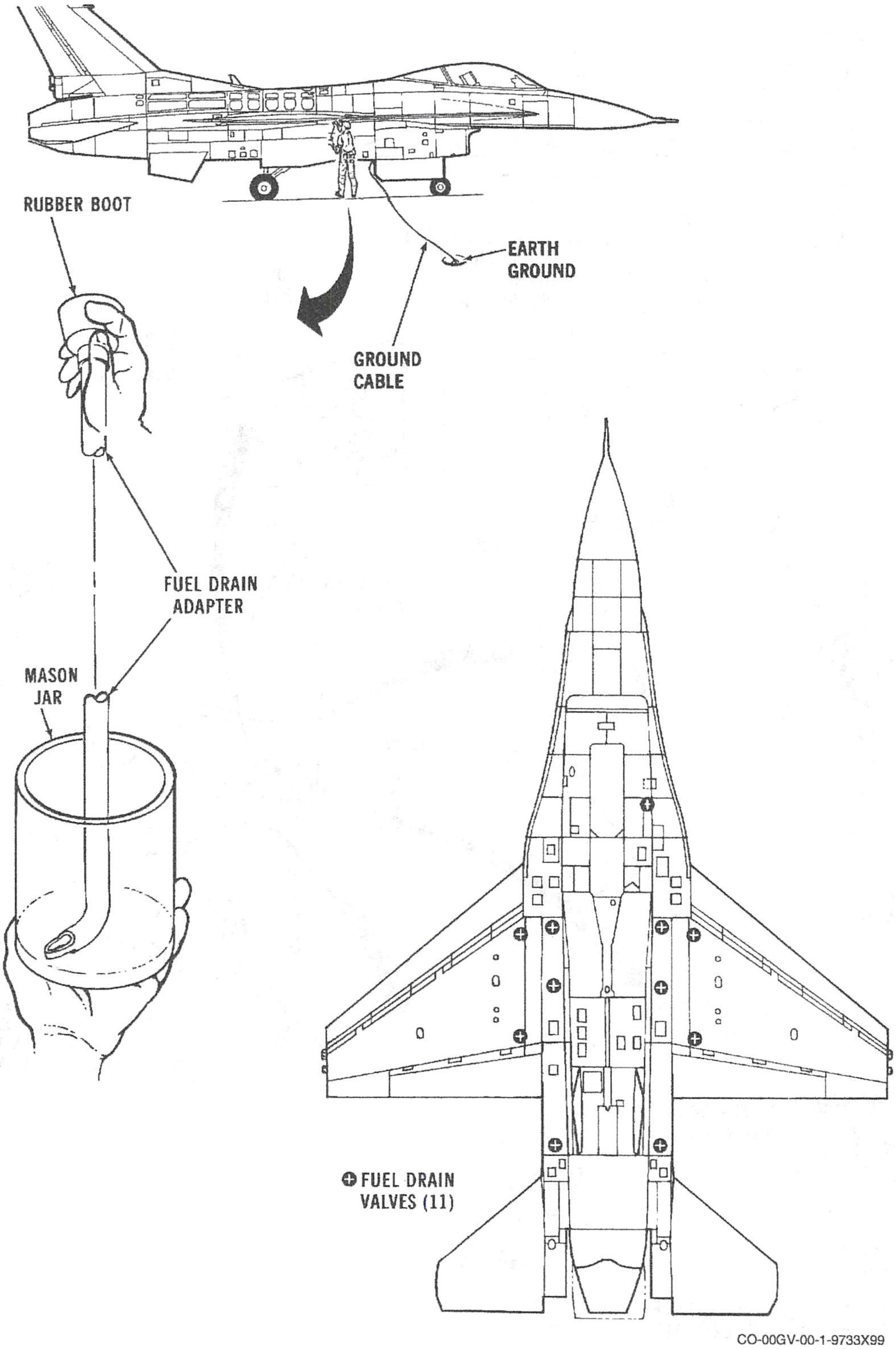


Figure 12-5. Draining Water from Fuel Tanks.

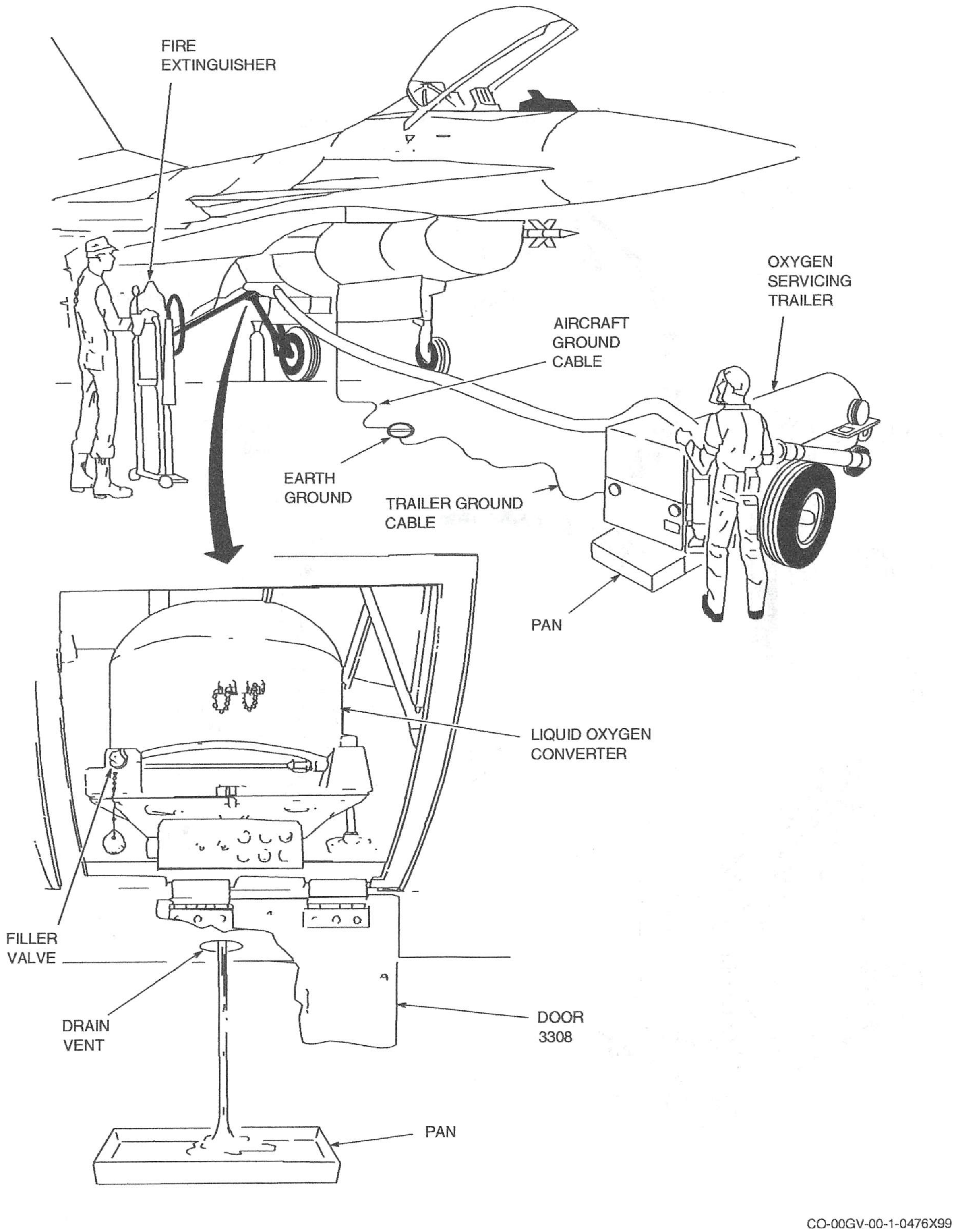


Figure 12-6. Liquid Oxygen Servicing.

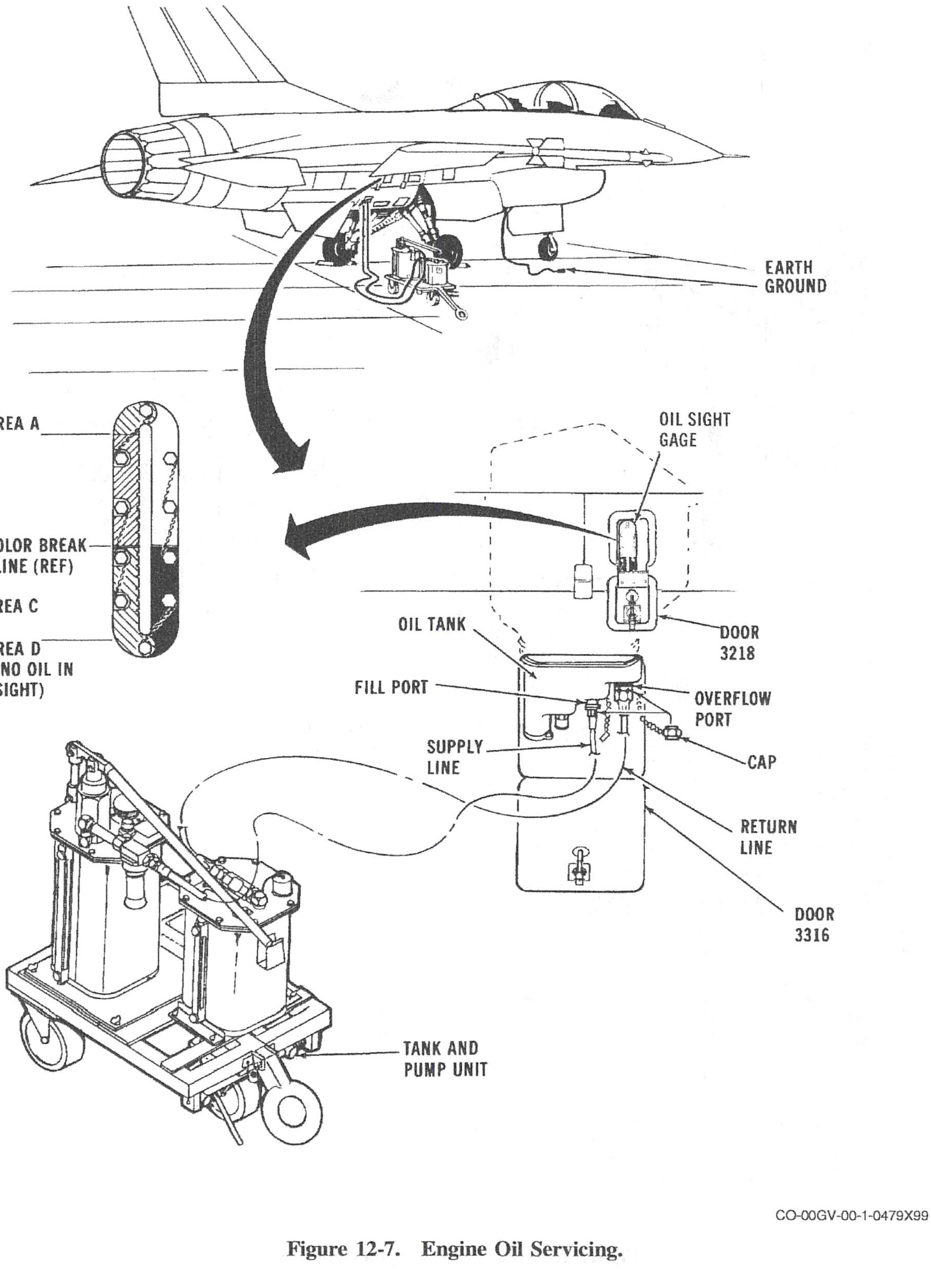


Figure 12-7. Engine Oil Servicing.

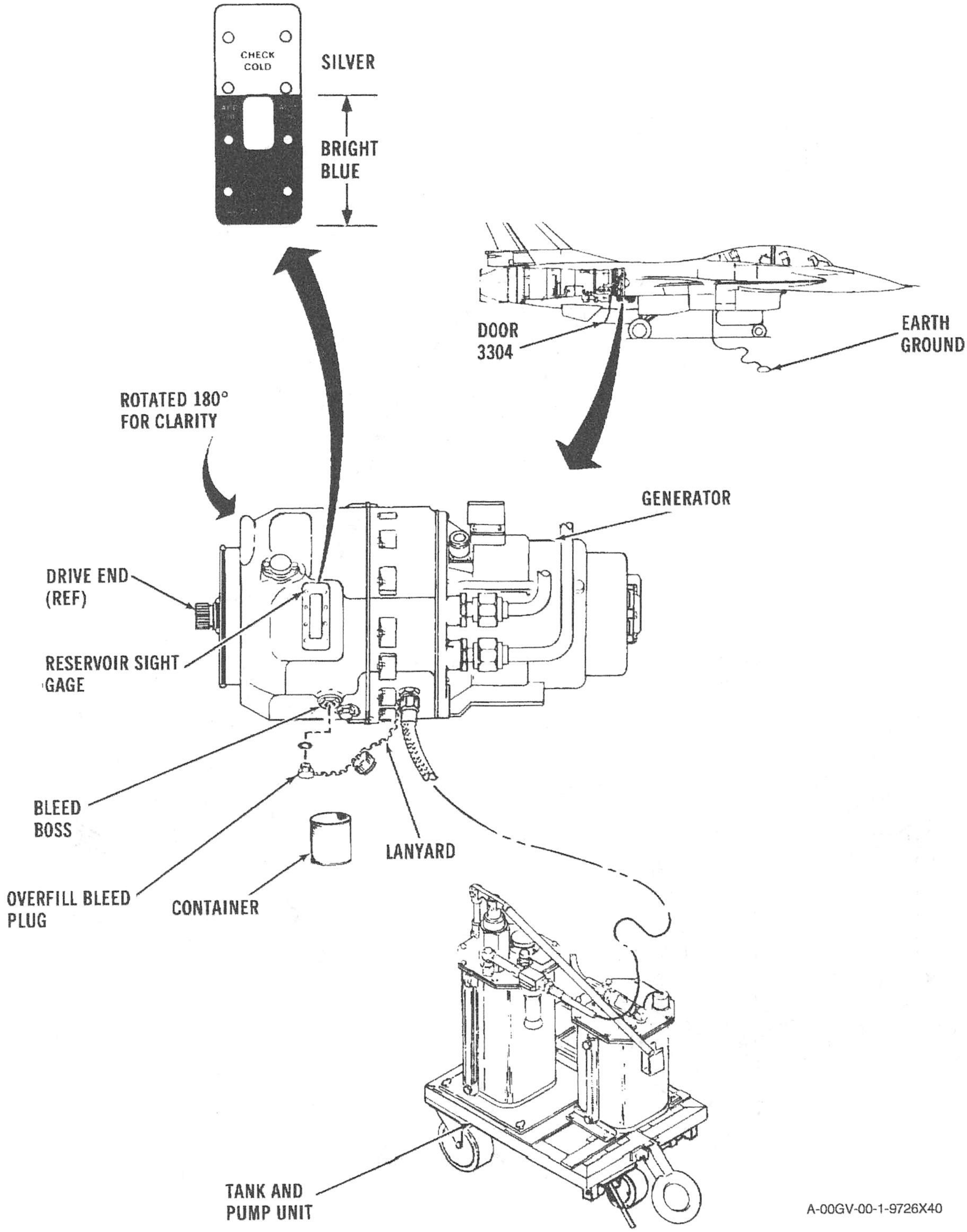


Figure 12-8. Main Generator - Constant Speed Drive Servicing.

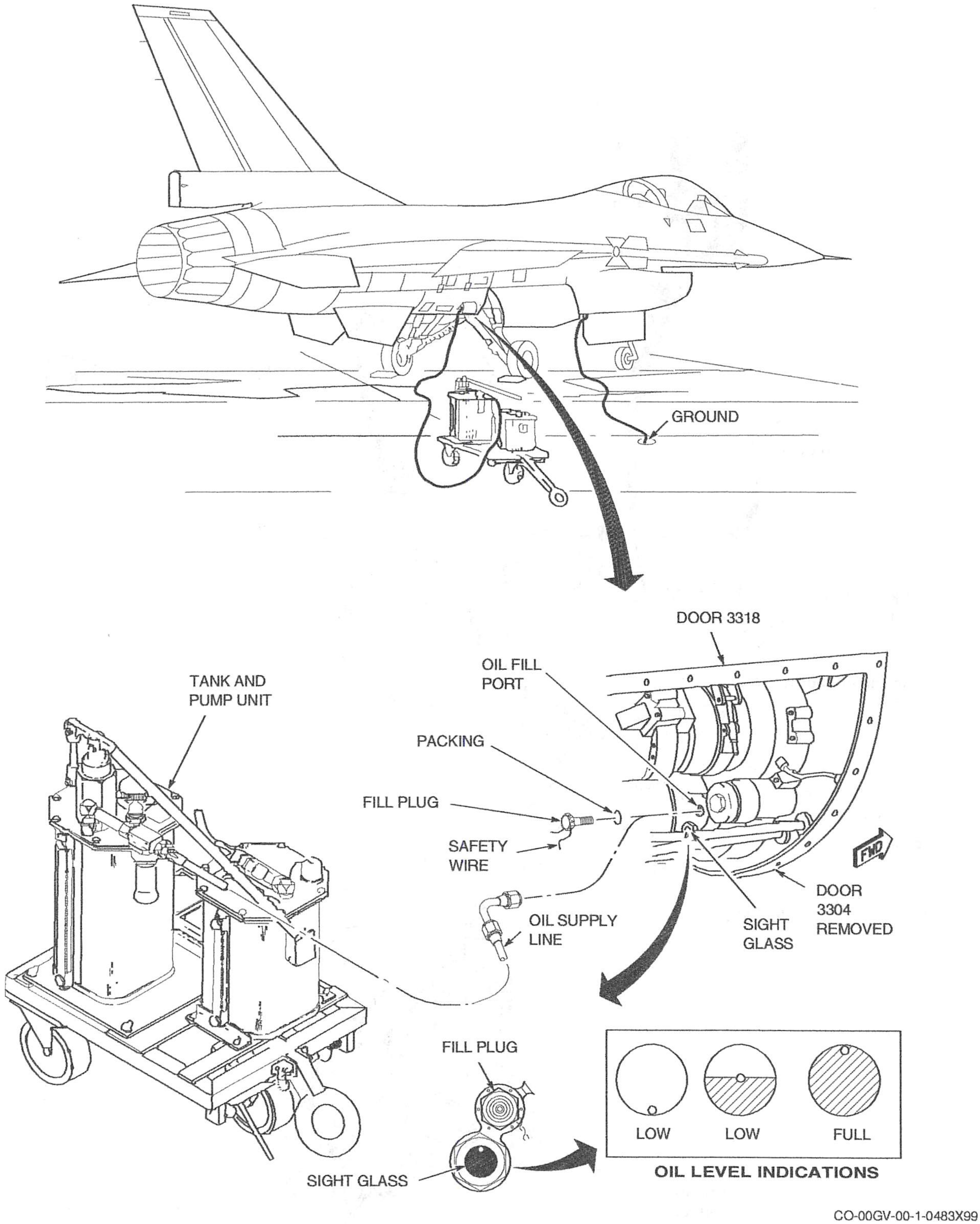


Figure 12-9. Accessory Drive Gearbox Servicing.

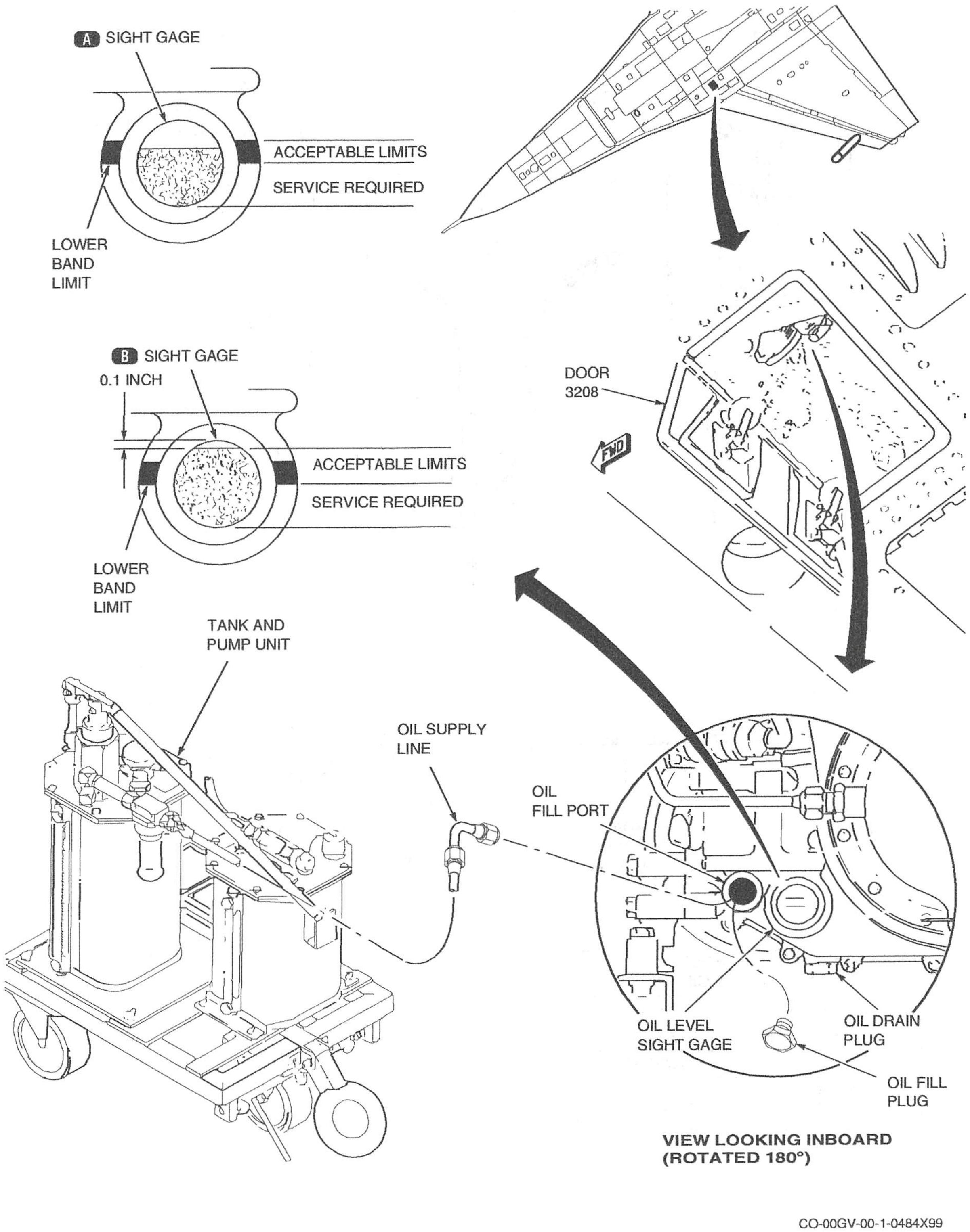
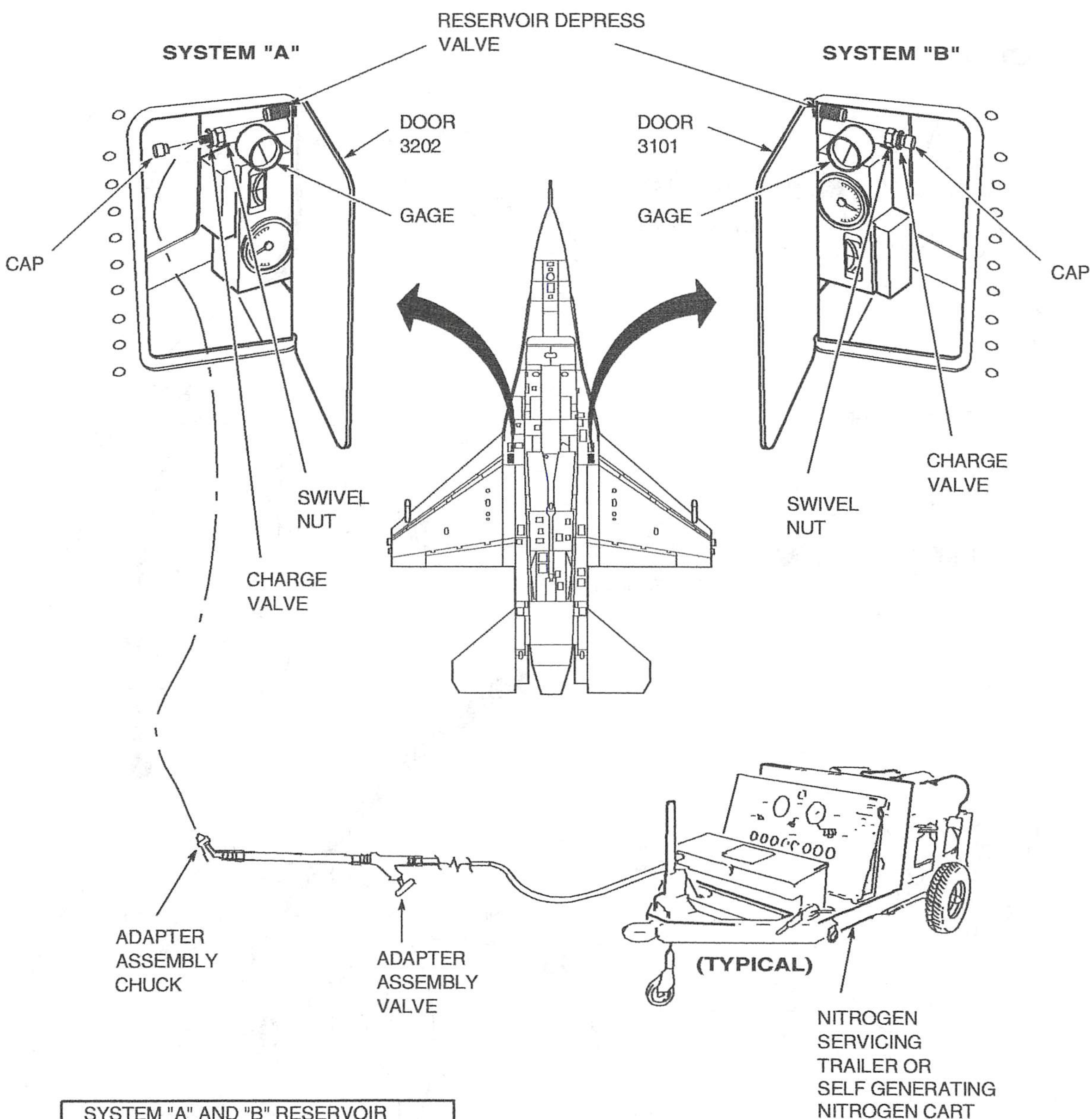


Figure 12-10. EPU Gearbox Servicing.



SYSTEM "A" AND "B" RESERVOIR PNEUMATIC SERVICING	
DEGREES F	PSIG
100 AND HIGHER	850-900
50 TO 100	750-850
10 TO 50	700-750
-60 TO +10	600-700

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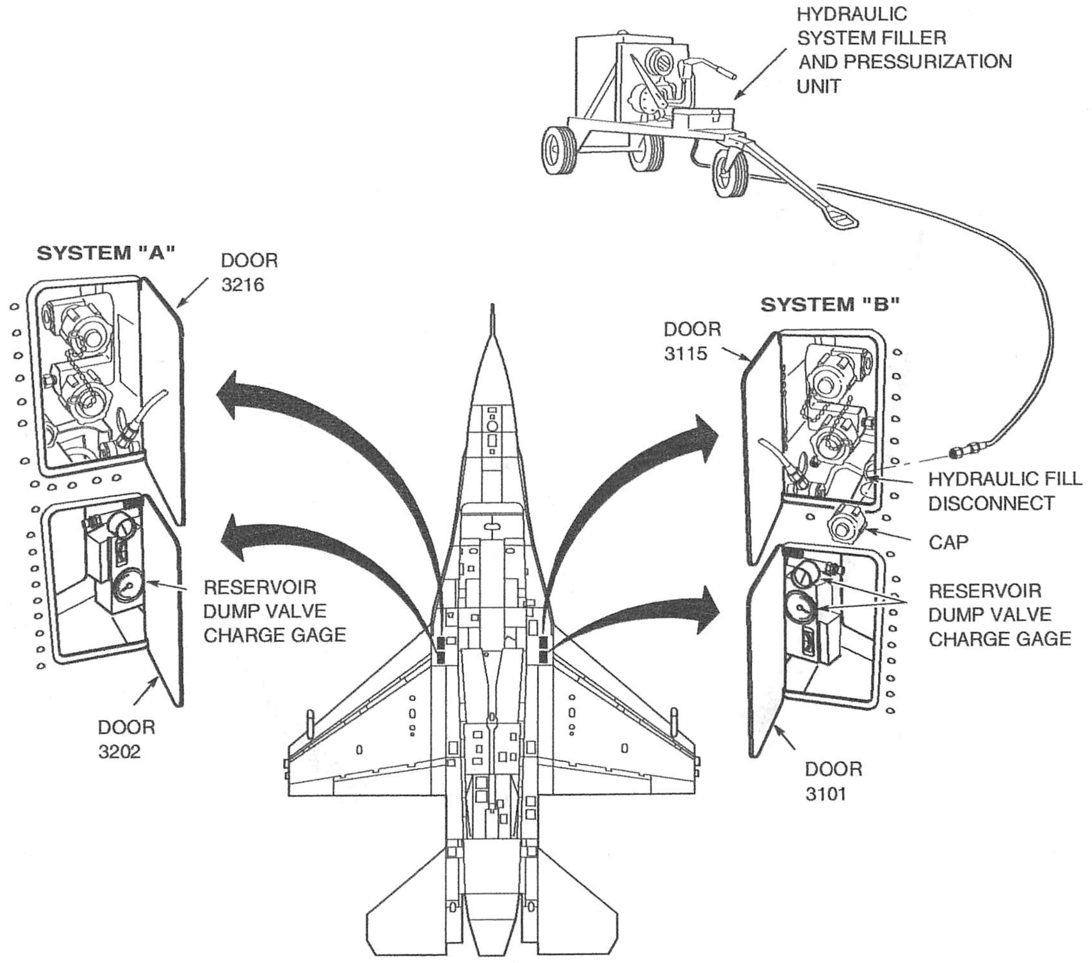
Figure 12-11. Reservoir System Accumulators Servicing (Pneumatic).



SYSTEM "A" RESERVOIR FILL LEVEL

SYS TEMP ° F	FILL LEVEL %			
	HYD SYS DEPRESS		HYD SYS PRESS	
	FULL	REFILL	FULL	REFILL
+140	79	63	59	43
+120	76	60	55	39
+100	73	57	52	36
+80	71	55	49	33
+60	68	52	46	30
+40	65	49	42	26
+20	62	46	39	23
0	59	43	36	20
-20	56	40	33	17
-40	54	38	30	14

SYSTEM "B" RESERVOIR FILL LEVEL

SYS TEMP ° F	FILL LEVEL %			
	HYD SYS DEPRESS		HYD SYS PRESS	
	FULL	REFILL	FULL	REFILL
+140	73	63	64	54
+120	69	59	60	50
+100	65	55	55	45
+80	60	50	50	40
+60	56	46	46	36
+40	52	42	41	31
+20	48	38	36	26
0	43	33	32	22
-20	39	29	27	17
-40	35	25	23	13

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Figure 12-12. Reservoir System Accumulators Servicing (Hydraulic).

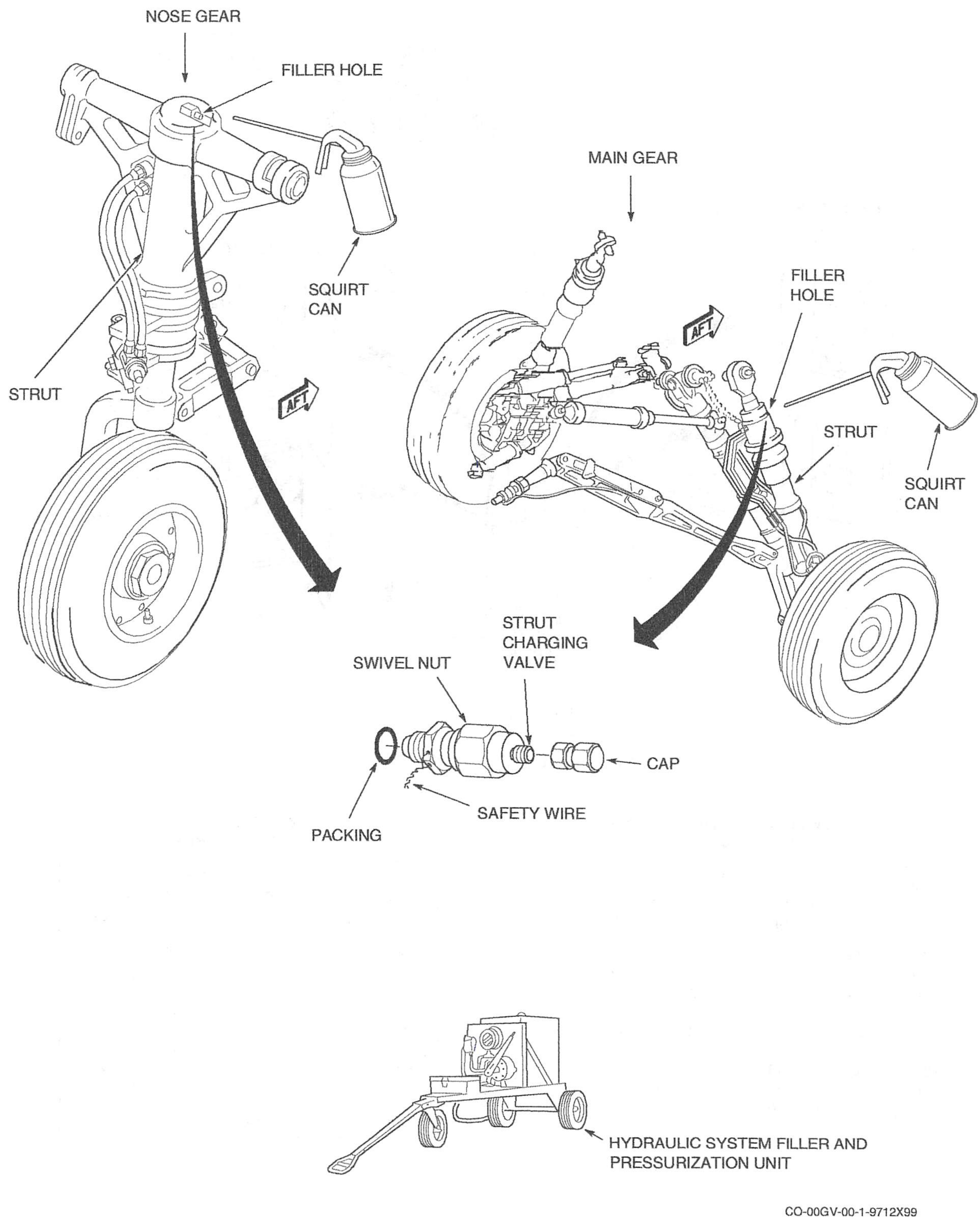
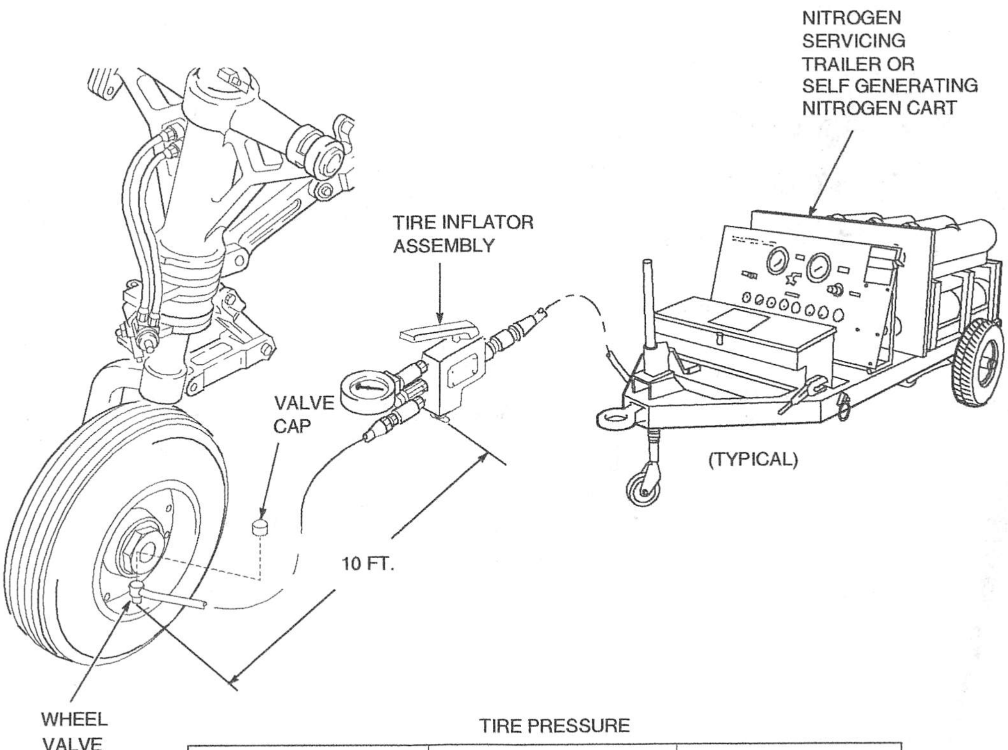


Figure 12-13. Landing Gear Servicing (Hydraulic).



TIRE PRESSURE

AIRCRAFT WEIGHT (POUNDS) (SEE INFLATION NOTES 1 AND 3)	MAIN TIRE PRESSURE (SEE INFLATION NOTES 2 AND 3)	NOSE TIRE PRESSURE
ALL WEIGHTS UP TO 25,000	210-220 PSI	6 215-225 PSI-14 PLY 215-225 PSI-18 PLY
25,001-30,000	250-260 PSI	6 215-225 PSI-14 PLY 215-225 PSI-18 PLY
30,001-35,400	275-285 PSI	6 215-225 PSI-14 PLY 255-265 PSI-18 PLY

INFLATION NOTES:

1. TIRE INFLATION PRESSURES FOR HIGHER AIRCRAFT WEIGHTS ARE PERMISSIBLE FOR ALL LOWER AIRCRAFT WEIGHTS.
2. BOTH MAIN TIRES SHALL BE INFLATED TO THE SAME PRESSURE WITHIN 10 PSI.
3. FOR UNSYMMETRICAL EXTERNAL STORES LOADING, USE 275-285 PSI MAIN TIRE INFLATION PRESSURE EVEN IF AIRCRAFT WEIGHT IS LESS THAN 30000 POUNDS.

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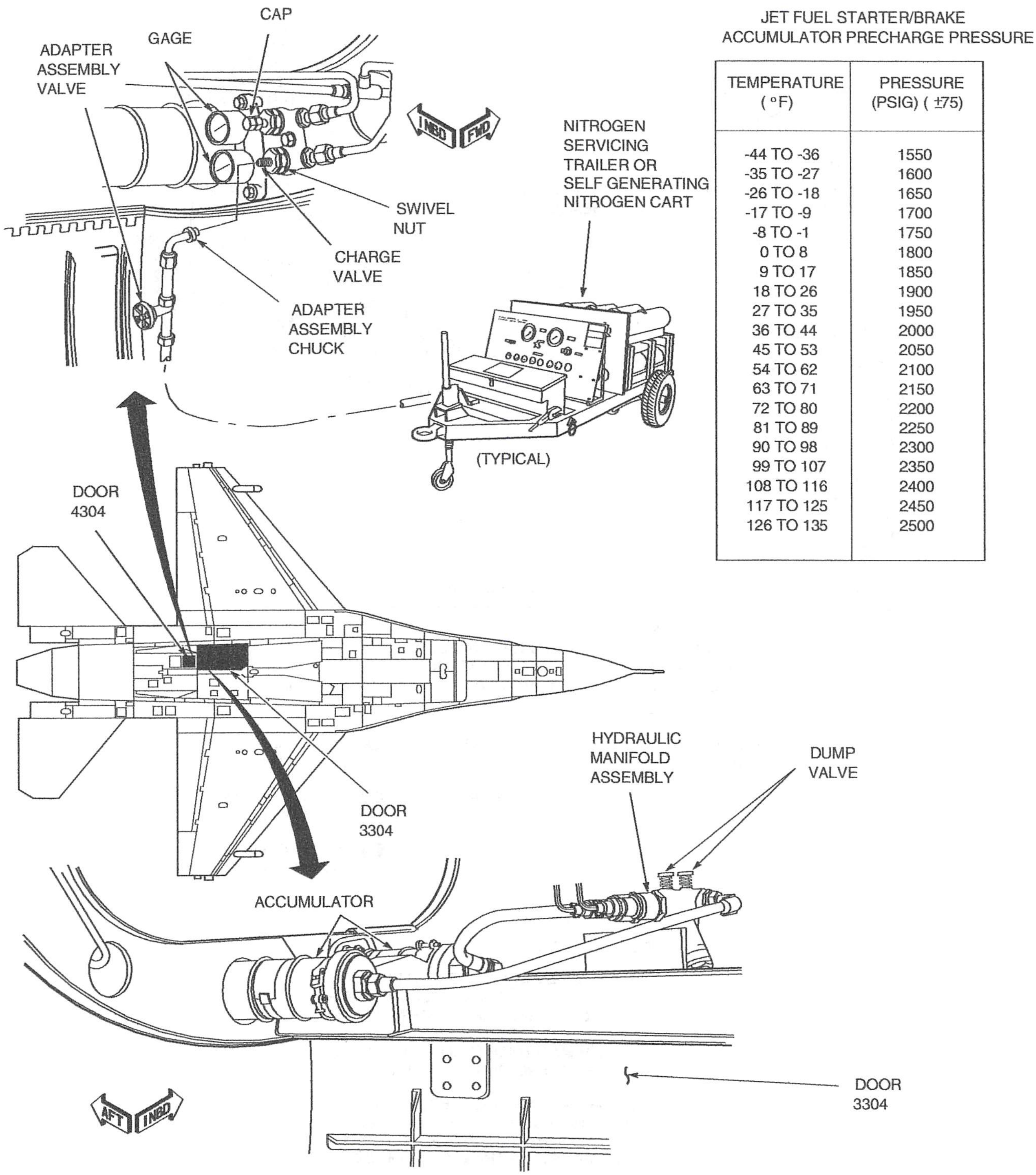
Figure 12-14. Tire Pressure Servicing.



JET FUEL STARTER/BRAKE
ACCUMULATOR PRECHARGE PRESSURE

TEMPERATURE (°F)	PRESSURE (PSIG) (±75)
-44 TO -36	1550
-35 TO -27	1600
-26 TO -18	1650
-17 TO -9	1700
-8 TO -1	1750
0 TO 8	1800
9 TO 17	1850
18 TO 26	1900
27 TO 35	1950
36 TO 44	2000
45 TO 53	2050
54 TO 62	2100
63 TO 71	2150
72 TO 80	2200
81 TO 89	2250
90 TO 98	2300
99 TO 107	2350
108 TO 116	2400
117 TO 125	2450
126 TO 135	2500

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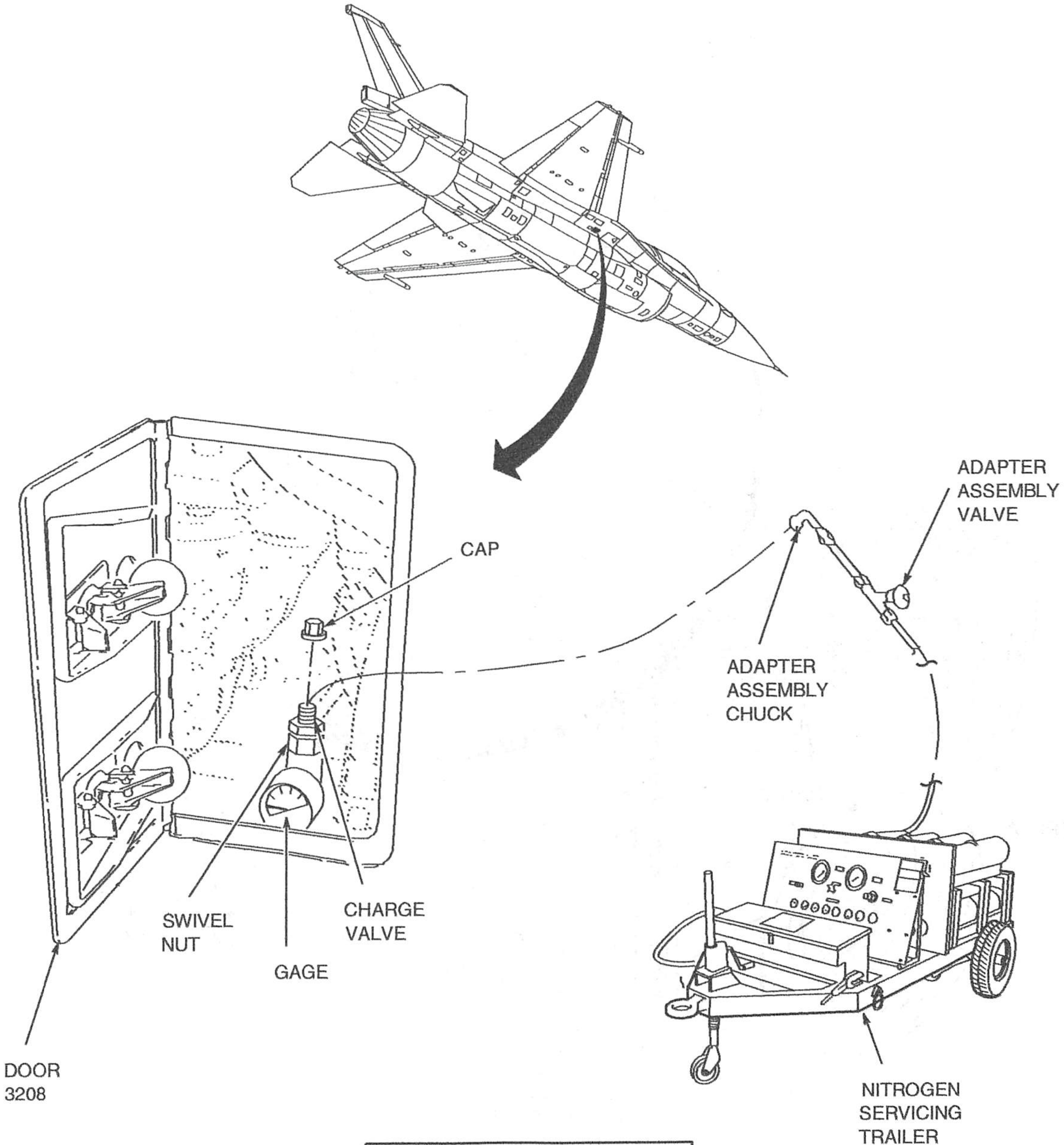
Figure 12-15. Wheel Brakes and JFS Accumulators and Reservoirs Servicing.



EPU RESERVOIR PNEUMATIC SERVICING	
DEGREES F	PSIG
100 AND HIGHER	3250-3500
50 TO 100	2850-3250
10 TO 50	2500-2850
-60 TO +10	2000-2500

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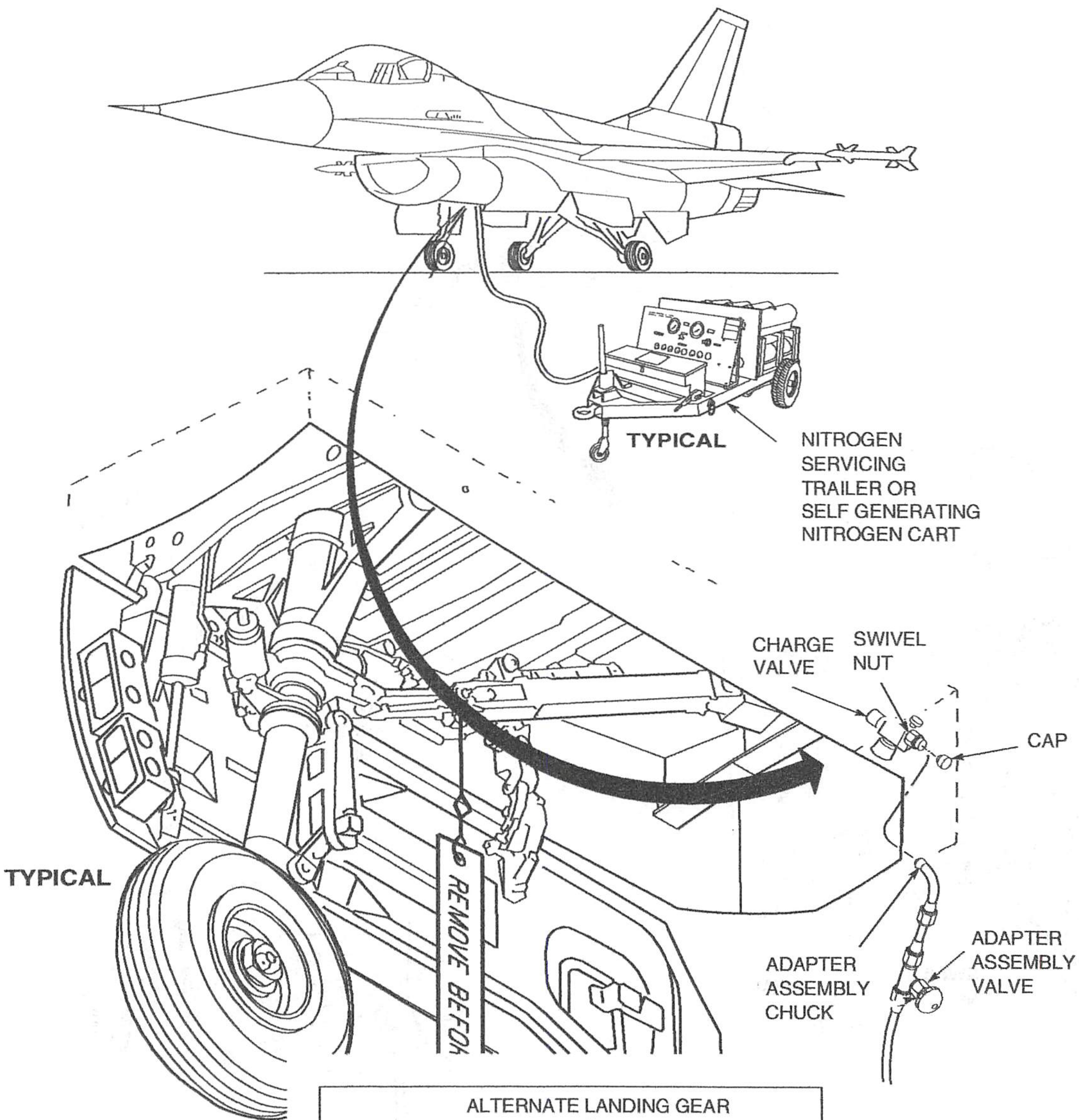
Figure 12-16. EPU Servicing (Pneumatic).



ALTERNATE LANDING GEAR AND ARRESTING HOOK RESERVOIR PNEUMATIC SERVICING	
DEGREES F	PSIG
100 AND HIGHER	3250 - 3500
50 TO 100	2850 - 3250
10 TO 50	2500 - 2850
-60 TO +10	2000 - 2500

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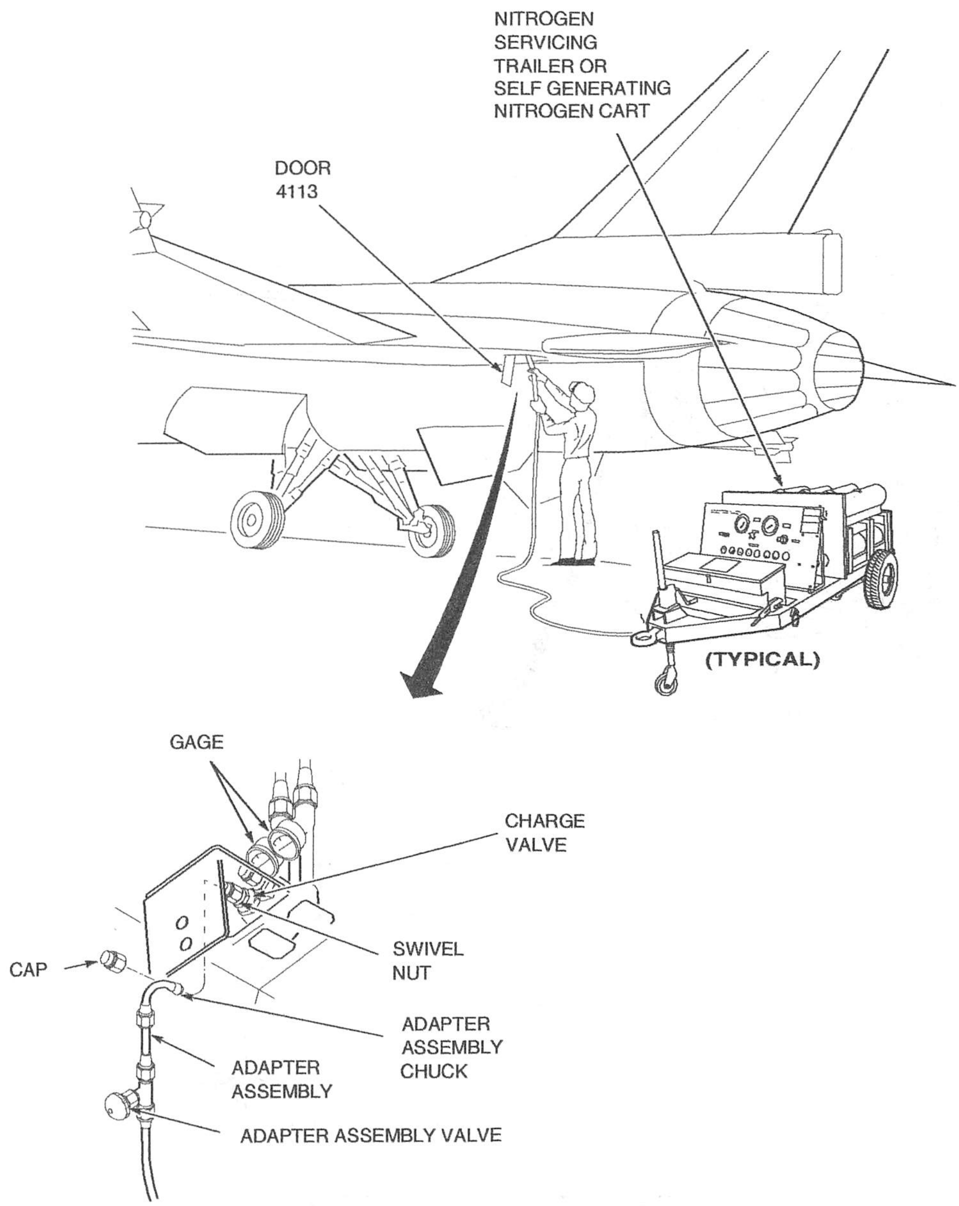
Figure 12-17. Alternate Landing Gear and Arresting Hook Servicing (Pneumatic).



FLIGHT CONTROL ACCUMULATOR PNEUMATIC SERVICING	
DEGREES F	PSIG
100 AND HIGHER	1300 - 1400
50 TO 100	1200 - 1300
10 TO 50	1100 - 1200
-60 TO +10	950 - 1100

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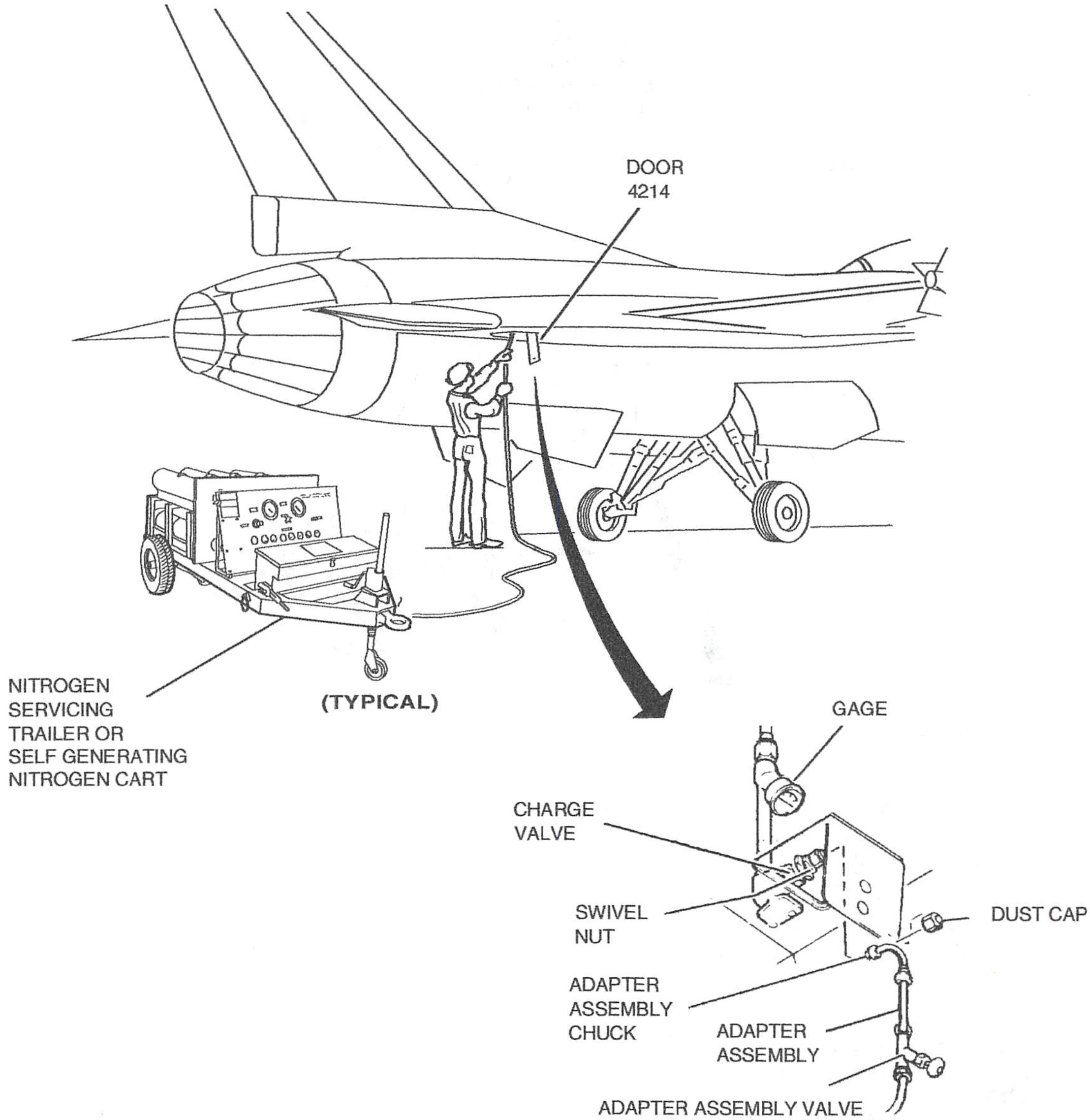
Figure 12-18. Flight Control Accumulator Servicing (Pneumatic).



DRAG CHUTE ACCUMULATOR PNEUMATIC SERVICING	
DEGREES F	PSIG
100 AND HIGHER	1300 - 1400
50 TO 100	1200 - 1300
10 TO 50	1100 - 1200
-50 TO +10	950 - 1100

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Figure 12-19. Drag Chute Accumulator Servicing.

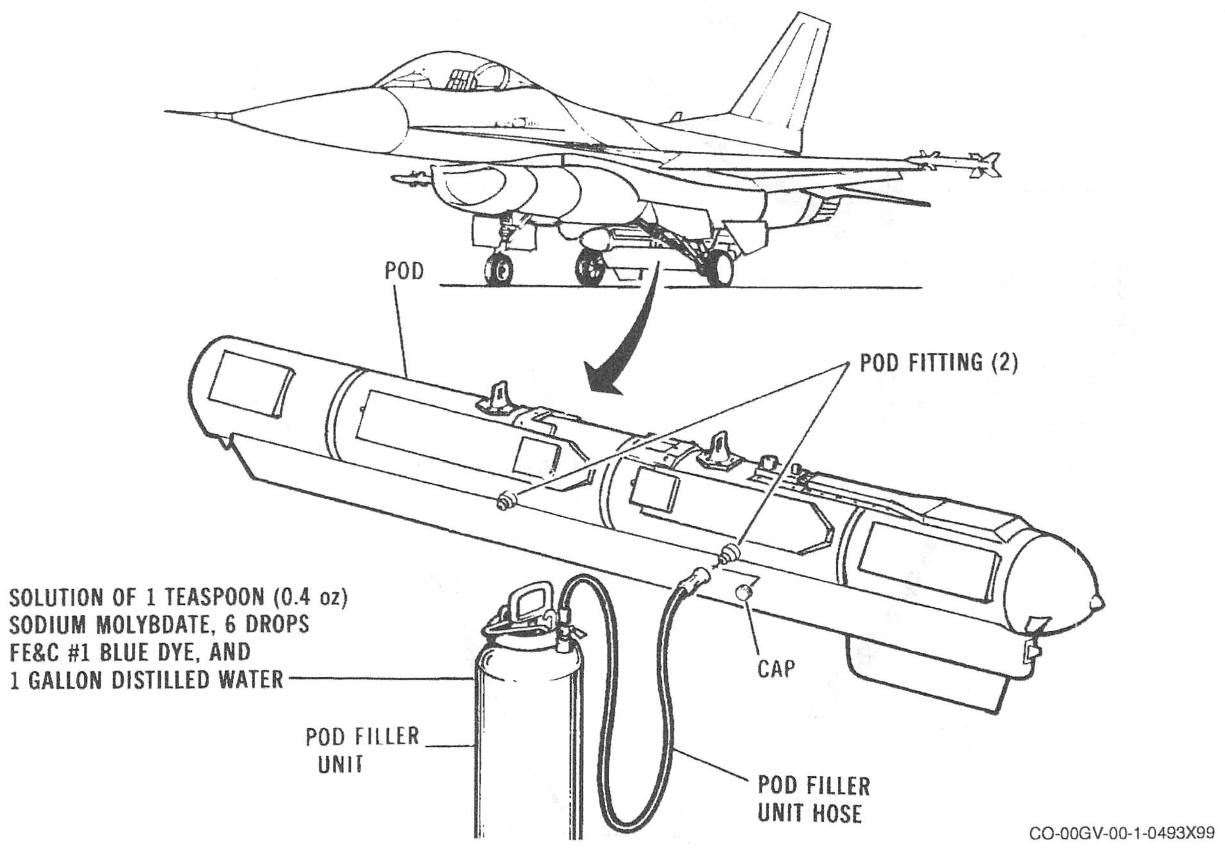

Figure 12-20. Electronic Warfare Pod Servicing.

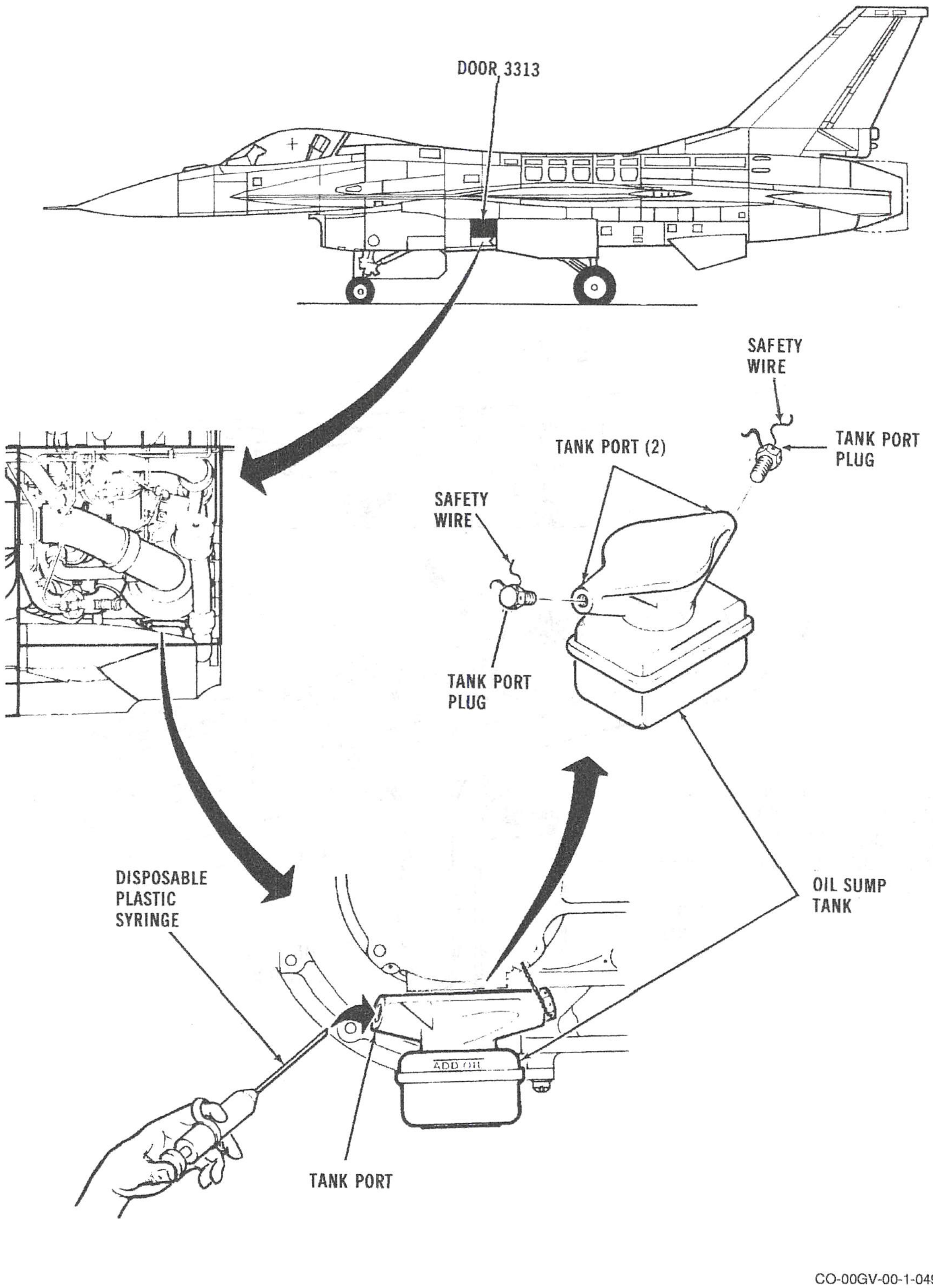

Figure 12-21. Cooling Turbine and Compressor Oil Sump Servicing.

CHAPTER 13
RESERVED

13.1 NO INFORMATION PROVIDED.